DOCUMENT RESUME

ED 029 502 EM 007 211

By-Bailey, Catherine M., Ed.
Educational Communications Handbook.
New York State Education Dept., Albany. Div. of Educational Communications.
Pub Date 68
Note-250p.
Available from-New York State Education Department, Div. of Educational Communications, Albany, N. Y. 12224
EDRS Price MF-$1.00 HC-$12.60
Descriptors-*Administrator Guides, *Audiovisual Aids, *Audiovisual Directors, Audiovisual Programs, Cataloging, Educational Facilities, Educational Practice, Equipment, Evaluation Methods, *Guidelines, Inservice Teacher Education, Instructional Materials, Instructional Media, *Instructional Programs, Media Specialists, Media Technology, Multimedia Instruction, Resource Guides, School Funds, School Personnel, Standards
Identifiers-*Boards of Cooperative Educational Services, BOCES

Designed to help school superintendents and audiovisual directors, this handbook attempts to collate all information concerning staff, school facilities, educational equipment, and materials necessary to use technology in instructional programs. The media of instruction dealt with include television, films, filmstrips, recordings, and programed instruction. Guidelines are given for their selection, evaluation, use, care, and organization. Guidelines for professional and subprofessional media personnel are supplied as well. Information is given on where to find funds and how to budget for media programs. Publications available from the Division of Educational Communications in New York are listed in addition to selected publications on educational communications available from a variety of sources. (GO/MF)

ED029502

EDUCATIONAL COMMUNICATIONS HANDBOOK

EM007211

The University of the State of New York/THE STATE EDUCATION DEPARTMENT
Division of Educational Communications/Albany, New York 12224

ED029502

Educational Communications
HANDBOOK

The University of the State of New York
THE STATE EDUCATION DEPARTMENT

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Division of Educational Communications
Albany, New York, 1968

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Loran C. Twyford, Jr.

Foreword

This handbook deals with educational communications in the schools of New York State. By educational communications we mean that branch of educational theory and practice concerned primarily with the use of media in the instructional program. The media include television, films, filmstrips, recordings, programed instruction, and the like. This book gives information on each medium and suggests many ways for organizing an effective program in educational communications.

The handbook is designed to help a superintendent of schools or a director of educational communications to start and plan a program. It attempts to bring together in an organized manner information concerning the staff, the school facilities, the educational equipment and materials necessary to use technology in the instructional program. It also includes information on sources of materials and how these materials are handled for distribution to teachers and students.

One of the difficulties in understanding this field has been a difference in terminology. Where we have quoted from other papers we have used a consistent terminology. The term educational communications is usually employed for instructional communications, educational technology, audiovisual education and similar terms. A list of terms used is included on pages 77-82.

The quantitative standards for educational communications, personnel, equipment and materials used in this handbook are the original DAVI standards adopted by the Division of Educational Communications of the New York State Education Department. Information for the specialized areas was furnished by Bernarr Cooper, Chief of the Bureau of Mass Communications, Loran C. Twyford, Jr., Chief of the Bureau of Classroom Communications, and by members of the staff of the Division. The names of the staff and their specialized areas are listed in Chapter III. Material was also provided by the Department of Audiovisual Instruction of the National Education Association, the Board of Audiovisual Instruction, New York City, and from many other school districts in New York State.

Special thanks are expressed to the following individuals whose contributions of materials, ideas and suggestions made this publication possible: Anna L. Hyer, Edward G. Bernard, Morris Freedman, Irene Cypher. The manuscript was prepared and edited by Catherine M. Bailey, Associate, Bureau of Classroom Communications.

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Chapter I

YOUR EDUCATIONAL COMMUNICATIONS PROGRAM

In June 1958, the Board of Regents established the Division of Educational Communications with responsibility that had been previously assumed by the Bureau of Audio and Visual Aids and with new responsibilities for educational television. The role of the Division has expanded into language laboratories, electronic classrooms, teaching machines, programed instruction, instructional material centers, and radio and computer-assisted instruction. In addition, great growth has occurred in the older media which includes instructional films, filmstrips, recordings, audio tapes, overhead transparencies, and many more. The development of video tape recorders, closed-circuit television and 2500 megahertz video transmission has greatly increased the scope and complexity of this field.

Technical competence coupled with experience in the classroom qualifies the Director of Educational Communications, in each school district, to assume responsibilities as technology assumes a rapidly expanding role in education. His position can be justified on the basis of improved instruction that can be provided by teachers who use educational communications materials. The cost of the position can often be justified by the savings that result from wise purchase or rental of materials, equipment and services. Many technological devices capture the attention of educators and school boards and may be purchased without consideration for technical details, staffing requirements, inservice training and adequate materials. It is the responsibility of the Director of Educational Communications of a school district to bring these matters to the attention of those who will make the final decisions. It is usually not possible for the busy administrator to be sufficiently knowledgeable in this field to avoid rather serious errors without professional assistance. The State Department's Division of Educational Communications has staff members who specialize in each medium, as well as on media projects, relating to sources of funds. They are happy to assist a school district in any way possible, but can not do the work of a qualified Director for a school district.

A person in each school and at the school district level should be assigned responsibilities for educational communications. The extent of responsibility will depend upon the state of development of the program and how much is done at the district level. At the district level the Director of Educational Communications plans and supervises the overall program. Expensive items are circulated from a district center and most purchases are made centrally.

Personnel

The greatest need in most educational communications programs is for adequate professional and nonprofessional personnel. Part-time persons should have released time and extra pay for the extra duties they assume. It is false economy to have the professional person doing things that can be accomplished by a clerk, technician or secretary. Very often part-time professional personnel can be provided with part-time secretarial help and certain clerical work can be carried out by available office staff. It is important that these paraprofessionals not assume professional responsibilities.

After September 1, 1969 all persons spending more than 25 percent of their time administering an educational communications program must be certified as directors of educational communications. Persons assigned responsibilities for this field in an individual building may not spend that amount of time, but it is important that they have training, experience and abilities that will fit them for the job. These persons should be able to work well with others and have some ability to work with technical equipment and materials. Persons who can specialize in this field often perform better than ones who can not give adequate attention to the work.

The responsibilities and activities of educational communications personnel are broad as well as detailed. The material included in this handbook is a bare outline of the scope of these responsibilities. The quality of the leadership provided by the director of educational communications is directly related to the amount of experience he has had and his creative abilities. When the educational communications program is directed by a person without adequate training and experience it is usually deficient in many respects and inefficiently carried out. The director of educational communications should be involved in all activities involving technical aids to instruction because they all involve similar administrative problems with which he is familiar. Normally he will have full or partial responsibility for language laboratories, electronic classrooms, television, study carrels with media, and will often have responsibility for the auditorium, public address systems, printing, photography, graphics, and computers. Activities involving technical operations and requiring technical personnel fall in his or her range of responsibilities. This general specification should not be interpreted as calling for a technician. A technician can not possibly do the many tasks calling for experiences in teaching and development of the curriculum. The director must continually meet with teachers and work with curriculum committees to carry out a successful program. The director that can carry out technical responsibilities yet serve curricular interests is a great asset to any school district.

Many educational communications activities are so involved that a specialist must be employed under the direction of the director of educational communications. The most obvious example is the television director. He must have specific television training and experience; and special talent for obtaining proper utilization of television programs. He will usually have a staff and a person in each building to coordinate television activities. The director of television may also assume some or all educational communications responsibilities if he has the required broad training and experience. Programed instruction is so specialized that an advanced program usually requires a person specifically trained in it. This is also true for photography, graphics, media research, and other media developments. The responsibilities and qualifications of a person filling these positions depend upon the degree of development of the program. In the initial phases a program may sometimes be started by the Director of Educational Communications. As soon as it is evident that an advanced program is desired the district should employ a specialist who will establish the program to best meet the requirements of the district.

Funds for Educational Communications

Some guidance on the sources of funds for educational communications can be obtained from estimates of yearly State media expenditures.

Local funds	$7,000,000
ESEA Title I	3,000,000
ESEA Title II	2,200,000
ESEA Title III	1,205,000
NDEA Title III	2,000,000
NDEA Title VII	300,000
Educational Television	1,400,000
Educational Technology	75,000
Experimentation & Innovation	80,000
(LOIS) Inservice training	4,000
Other	1,000,000

Because of the many sources of funds it is essential that the director of educational communications know how to obtain funds from each source.

The Division of Educational Communications at the State Education Department has associates that specialize in assisting with the preparation of proposals to meet the varied requirements for these funds. School administrators should make certain that the director of educational communications is involved in planning for media under each title. In some districts the director of educational communications takes some responsibility for local administration of federal programs if he is given adequate supporting staff to carry out some of his educational communications activities.

The largest source of funds for educational communications is the local school district budget of which state aid is a part. The national guidelines which have been accepted by the Division of Educational Communications call for 1 percent of the average per pupil cost for materials; 1½ percent for an advanced program; 1 percent for equipment. An advanced program may easily approach 3 percent. These figures do not include funds for salaries, building construction or remodeling, or for television or learning centers. The Division of Educational Communications has developed percentile ranking scales for 14 aspects of an educational communications program. Their use will permit a school district to determine the standing of its overall program or segments of its program in relation to comparable districts. The data points out districts that have advanced programs that can serve as models for districts who wish to develop their own programs.

Boards of cooperative educational services may establish educational communications centers and provide staff materials and equipment. School districts should consider utilizing BOCES services and assisting in the development of regional film libraries.

Title I ESEA is a major source of funds for the purchase of media to assist the educationally deprived. Media are particularly valuable for providing educational experiences for these children who may not be able to respond adequately to conventional instruction. Many media provide interest and excitement and others provide for an impersonal approach desired by certain students. The Director of Educational Communications can be of great assistance in the selection and prescription of appropriate materials and equipment for these individuals.

Title II ESEA provides basic grants for library materials as well as for educational communications materials. Special purpose grants are also available to carry out special projects. These often involve media.

Title III ESEA provides funds for innovative and exemplary projects. These programs are designed to create an awareness of educational needs and stimulate formulation of imaginative programs. Educational media are often the central theme of these projects.

Title III NDEA is one of the older sources of funds for media. It is a matching program and must be formulated as a project in one of the approved areas. General purpose expenditures are not approvable.

Title VII NDEA funds are available for research or media dissemination projects. These funds are administered directly from the U.S. Office of Education. The experimental projects usually involve controlled experimentation and will require a qualified research administrator. Grants for the dissemination of information on media are also available. This is a competitive program.

The Division of Educational Communications has recently created a grant program to demonstrate the use of technology in the schools. Although the amount of funds is small it is hoped that these demonstrations will encourage other schools to adopt these practices. Schools must match grant funds.

Educational television funds are available from the Division of Educational Communications for approved projects and may be used for equipment as well as for operations. This is a matching program with the State decreasing its contribution over a 5 year period. Television projects may include television production, video tape recorders and most other phases of television.

Experimentation and innovation funds are available from the State Education Department's Division of Research. The purpose of these programs is to experiment within a tight research design and theoretical framework with new and previously unevaluated approaches to instruction. Some of these studies involve media. It is a competitive grant program.

LOIS programs provide funds for locally originated inservice programs including those involving media. New Federal legislation should provide for a substantial expansion of this program. In addition the State sponsors some programs of instruction at colleges and universities. These grants cover tuition and fees.

In addition to these sources of media funds, there are provisions for media in many other federal funding programs. Media are an integral part of instruction and as such should be included in all advanced instructional programs.

Definitions and Standards

Due to the rapid development and increase in scope of the field there have been a number of terms describing it. The term educational communications is the preferred term adopted by the Regents which incorporates audiovisual and television activities as well as all other uses of technology for instruction. Since the term is rather long it is often contracted to "edcom." Technology often refers to our field but it does not adequately reflect our interest in learning and curriculum. Media is also employed, but it puts too much emphasis on the channel of communication and too little on the results of instruction. Administrators are requested to broaden their audiovisual programs and make use of all edcom materials and equipment. Two additional terms require comment. Language laboratories have been widely employed for the teaching of foreign languages. This equipment is also very useful for other instructional purposes including speech training, dictation, and many types of student participation. For this reason the term electronic classroom is used to describe this general use equipment.

The Instructional Materials Center (IMC) is a term that has come to mean a program combining book and edcom materials in one location for student use. Public libraries have for some years provided a variety of recordings and visual materials for use by their patrons. It has been incorrectly assumed by some administrators that an adequate edcom program can be carried out by combining all book and non-book services. The experiences of those who have attempted this marriage over a period of time is that there is simply too much to do in each field for it to be done well. We believe that the two programs require a high degree of specialization and that the best programs are carried out separately even though the amount of time for each specialist is limited. Occasionally it is possible to find a person with adequate training, experience, and interest to carry out both activities on an interim basis. The two programs need to be closely coordinated so that student use of instructional materials is not carried on at the expense of teacher use. We believe that the term "Instructional Materials Center" refers to a location in one building in which books and a limited number of visual and audio materials are made available for student use. This term is not synonymous with educational communications center, building media center and is especially inappropriate for a district center.

The Division of Educational Communications of the State Education Department accepted for use in New York State the Quantitative Standards for Audiovisual Personnel, Equipment, and Materials which were adopted in 1965 by the Department of Audiovisual Instruction, NEA and by the Association of Chief State School Audiovisual Officers. These standards specify the number of personnel and the number of pieces of equipment and size of materials collection for an adequate and an advanced program. Although these standards are considerably higher than the average district attains, they are certainly reasonable and can serve as desirable goals. The standards for overhead projectors and audio tape recorders will undoubtedly increase as a result of the rapid growth in these media.

Administration of Educational Communications Programs

Administration of the educational communications program for a school district consists of planning for development of all media, developing a program and seeing that it is carried out, budgeting for the entire program, developing priorities, evaluating each of the programs and promoting the program so as to provide the best instruction for students with the resources that are available. In accomplishing this attention must be given to each medium since each must be treated differently.

Instructional films are expensive and require expensive projectors. As a result they are usually kept in the district edcom center so that they can be circulated for maximum use. Smaller districts will probably rent instructional films from a film library or purchase services from a Board of Cooperative Educational Services. One of the most difficult decisions with this media is that of determining whether to set up a film library in the district or to continue to rent films. With a substantial investment in films it is essential that they have high utilization. An inservice program for training of teachers is essential. Student projectionists may also be employed to assist those teachers who do not operate projectors. The 16mm. film is the basis of most educational communications programs and as such deserves careful attention. Research has shown that the instructional film is probably the most effective of all of the media.

The selection of 16mm. films for purchase should never be done on the basis of printed reviews alone. It is desirable to have a committee make the selection. This should include subject matter specialists, curriculum persons as well as educational communications personnel. It is often wise to rent a film until its utilization exceeds five bookings a year at which time it may be purchased.

The filmstrip program involves more materials than the film program, but the cost of a filmstrip may be no greater than that of a book. Some districts maintain a large district collection and smaller collections in each building or in each department. Filmstrips may be made available for student use after teacher use is provided for.

Filmstrips can be very effective when properly utilized. The lack of a sound track may limit the information presented unless the teacher is careful to make explicit statements about the contents of the filmstrip. Their low cost makes them easily accessible and permits the teacher to use them when needed. Sound filmstrips approach films in conciseness of instructional message. They are somewhat more difficult to use than the filmstrip but may be easier to use than a sound film.

Overhead transparencies are revolutionizing classroom procedures. Used in daylight, overhead transparencies can place material on a screen that previously required many minutes for the teacher to put on the blackboard. The teacher can face the class while pointing out features on the transparency. Mistakes in presenting information are virtually eliminated. Many schools use overhead projectors to such an extent that blackboard work is greatly reduced. Prepared materials are now readily available, as are prepared masters, from which transparencies can be made. Copy machines can be employed to make a transparency at a moment's notice of student work or of other pertinent visual material. Overhead projectors should be permanently assigned to teachers who make regular use of them.

School districts should plan for a graphics center to make those materials for teachers that are not commercially available. Transparencies of budget presentations can organize thinking on school matters and assure their acceptance. Teachers will require file space for transparencies. The projection screen in the classroom should be tilted to produce a rectangular image from the projector which is usually placed on or near the teacher's desk.

Audio tapes are rapidly increasing in popularity. They provide most of the advantages of educational radio without the scheduling problems its use involves. The tapes have been used for language instructions but are available in most other subjects. The Division of Educational Communications of the State Education Department will provide master copies of nearly 5,000 tapes for the cost of tape alone. The tapes may be made available for individual student use as well as for teacher use. The capability of making audio recordings should not be overlooked. Lessons may be recorded for those students who may be absent, for use at a later time.

Many audio recordings are available only on disc and are used extensively in the elementary grades. Their ease of use by children expands their range of application. The more expensive recordings should be housed in a central collection with additional collections in each building.

Eight millimeter motion pictures are increasing in use and will provide a supplementary source of instructional films. Those that are available in cartridges make for ease of utilization unmatched by few other materials. They are readily available in silent form and for short repetitive demonstrations of skills. New projectors are now available for reproducing sound as well as picture. One of the responsibilities of the Director of Educational Communications is to watch developments in this medium while developing his 16mm. program. The lack of standardization of sound track, cartridges and equipment may delay the widespread use of 8mm. equipment. It will undoubtedly be very useful for special purposes.

Those schools not using educational radio may wish to use programs provided by the Empire State School of the Air. The programs are 15 minutes in length and are broadcast over FM stations throughout the State.

Broadcast educational television programs are available to most of the schools of the State. Five educational television councils broadcast educational telecasts. Guides are usually available in advance to assist the teacher to use the programs to greatest advantage. The purchase of receivers, an antenna, and subscription to the services of a television council permits most schools to begin using television for educational purposes.

Closed-circuit television within a school building or throughout a school district has been greatly facilitated by the availability of low cost video tape recorders. Programs to use on these recorders are available from the department and they may be scheduled to meet local demands. It is possible to send the programs from a central source by utilizing 2500 megahertz transmission, cable, or transmission over a community antenna system as well as by shipping tapes from school to school.

Programed learning is the most carefully tested instructional material available. Students may learn from these materials with little or no assistance. Their potential has been demonstrated and it remains for educators to obtain wider use of these materials. Some programed materials are used in machines but the lack of standardization of machines has been retarding their use.

The field trip is an excellent means of acquainting students with their community. There are very specific steps that a Director of Educational Communications must take to obtain the maximum value from such trips.

New developments in educational technology are constantly being introduced. These include dial access, computer-assisted instruction, and the "talking typewriter." These devices may bring considerable publicity to school districts using them. If they do not work out in regular use they may also create bad publicity. It is recommended that the experimental nature of these applications be stressed until it is clear that the factors of effectiveness, teacher and student acceptance, costs and reliability are established. The Division of Educational Communications can provide valuable assistance in pointing out the weaknesses and strengths of these innovations before any commitment has been made.

Operating an Educational Communications Program

Without an adequate budget an educational communications program can not be carried out well. Funds may be obtained from local, State or Federal sources but in any case it is important to prepare and defend a budget that assures wise expenditure of funds. Overhead transparencies of your budget status and requests can not fail to convince those responsible that your program is sound and that your requests are justified. Utilization figures can show growth in your programs. Involvement of each school in budget planning can assure support at budget meetings and assure use of the equipment and materials when they are available.

Bids must be prepared for purchase of expensive edcom equipment. This can be a difficult task particularly if some effort is made at standardization on specific brands of equipment for ease of use by teachers. A directory is available from the National Audiovisual Association that pictures and describes most equipment that is available. State contracts are available for a wide range of equipment. By purchasing from this source the necessity for local bidding is reduced or eliminated.

Materials will not be utilized unless teachers are aware of their existence. A catalog of materials, equipment and services is the method most often employed to acquaint teachers with available materials. Each teacher should have a catalog. It should be updated or revisions should be added each year. Materials must not only be listed but they must be described in sufficient detail to enable the teacher to make intelligent selections. The preparation of the catalog is very difficult and time consuming. School districts should now investigate available computer services which print out information on materials from which a catalog can be prepared. The catalog should also describe in detail the procedure for obtaining materials.

Ordering and booking materials can be very time consuming unless the procedures are well planned. Multiple copy forms may simplify the process. An adequate means of distributing materials is essential. Although orders should be planned ahead as far as possible it is also desirable to have procedures established for obtaining materials with little notice. An automatic checking system is required to make certain that materials are returned on time.

Equipment must be available in each building and provisions must be made for spare equipment to replace that which has failed. It should not be necessary to carry equipment from one floor to another. Storage facilities are required but each teacher should have ready access to it. Annual maintenance checks are required if not more often.

Training of teachers is essential if materials are to be well used. New teachers will need special training in procedures employed in the school district as well as with specific brands of equipment used. Teachers rapidly forget how to operate equipment unless they use it often. A refresher course may be called for.

Evaluation

Evaluation is a very important process required before any expensive material or piece of equipment is purchased. Less expensive items need not be so carefully evaluated since it is not so important that they be utilized fully. The evaluation committee should include the educational communications specialist, subject matter specialist and any other person having responsibility for its use. The Division is collecting short evaluations of materials and all school districts are urged to use the same form and send them to the Division for tabluation for statewide use.

The educational communications program of a school district should be evaluated periodically to determine how well it is attaining objectives thought to be desirable. A check list is included in this handbook. The Division evaluates the edcom program of a school district participating in a cooperative review of the Department.

Media Facilities

Each classroom should be adequately provided with facilities for use of educational communications materials and equipment. It should be possible to darken each room and provide a permanently installed screen. Electrical outlets should be available and control of lights should be convenient. The more advanced classrooms will have provisions to bring radio and television programs into the classrooms from a central source. Equipment which is used often should be kept in the classrooms. Equipment used less often should be stored on the same floor and be readily available to teachers. Special facilities are recommended for programs involving extensive work by individuals.

Language laboratories, electronic classrooms and the learning laboratory are specialized learning centers containing edcom equipment that should be planned for and maintained by the Director of Educational Communications. His experiences can be invaluable in seeing that these facilities minimize problems encountered in their use.

District educational communications centers or BOCES centers require special consideration based upon the stage of development of each medium involved. The more advanced centers will consist of television studios, graphic production facilities, a film library and many other service facilities. The Division provides consultation incorporating the most advanced thinking on these facilities. Films may be transmitted over closed circuit television to each classroom. Audio and visual material may be retrieved from a central source for student as well as for teacher use.

Media Resources

Boards of Cooperative Educational Services may now establish communications centers to serve many school districts. Administrators are advised to investigate services currently provided and those that may be provided. Twenty-five BOCES districts currently provide communications services.

Districts wishing to use media for the integration of the arts and humanities into the ongoing curriculum should obtain CUE publications available from the Division.

The Division maintains a list of available educational communications personnel and is kept informed of openings for professional edcom personnel.

The Department of Audiovisual Instruction of NEA represents the educational communications interests of the profession. The New York State Audio Visual Association is the New York State affiliate. There are seven regional organizations. In addition, there is the national television organization, National Association of Educational Broadcasters and the New York State Educational Radio and Television Association.

Many publications are available from the Division of Educational Communications, New York State Education Department. These supplement the extensive publications in this field as well as those available from DAVI.

Summary

This chapter has provided a brief overview of the educational communications field as it exists today. It should be clear that a professional Director of Educational Communications is required to carry out all of the programs efficiently and with due regard to the curriculum. The following chapters detail these and other matters of interest to the administrator or director of educational communications. All of the recommendations may not apply to your schools. Some will change within the next few years. The ideas they contain will alert you to the many facets of this exciting field leading to the improvement of instruction.

Chapter II

THE FUNCTION OF EDUCATIONAL COMMUNICATIONS IN THE PUBLIC SCHOOLS *

HIGHLIGHTS

- Education is a matter of individual human growth and development; therefore technological methodology must be introduced with care.
- The examples of modern medicine, industry, and business (which devote major attention to capital investment in tools and hardware and research and development) can serve as guides to education's future development.
- A technological culture, by definition, is one that finds technological solutions to its problems. This means that the environment of the technological culture which contributed to the problems of education also contains the elements that can help to solve them.
- A technological leap forward is required in education.
- The first function of technological media is to supplement the teacher through increasing his effectiveness in the classroom. Educational media are both tools for teaching and avenues for learning; their function is to serve these two processes by enhancing clarity in communication, diversity in method, and forcefulness in appeal. Except for the teacher, these media will determine more than anything else the quality of our educational effort.
- The second function of media is one in which the media alone may present and, in a sense, teach certain content to pupils. Here, the teacher determines objectives, selects methods and content, and evaluates the final learning outcomes. The presentation of information, and even the direction of routine pupil activities, may be turned over to such new media as programed learning materials, television, or motion pictures. Function No. 2, then, is to enhance overall produc-

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* This paper was developed by an audiovisual task force assembled by the NEA Division of Audiovisual Instructional Service in Washington, D. C., on September 6-8, 1962.

tivity through instructional media and systems which do not depend upon the teacher for routine execution of many instructional processes or for clerical-mechanical chores.

- The media specialist's highest call is to leadership in the application of technology to appropriate ends and under favorable circumstances.
- If a school system is truly serious in its effort to apply the full range of educational media to the tasks of increasing its productivity and enhancing the quality and diversity of learning, it must place this function at a level coordinate with business management and curriculum administration.

Modern society is characterized by a high degree of technological sophistication. The take-off point for our present rate of development was the industrial revolution of the 19th Century. Since that time productivity has increased through the progressive application of a series of innovations in method, machinery, communications, and automation. These innovations are the result of extensive research and development and are directly responsible for the material affluence of our present society. In education, an increase in productivity has been neither the goal nor the result of our efforts during this period. Correspondingly, education has not been characterized by technological innovation. Only in the last decade have we turned to technology for systematic support of instruction, and only very recently have we begun to develop communications systems tailored to educational specifications rather than merely seeking classroom adaptions of the byproducts of industry.

A technology of instruction, as any technology, is a complex activity involving people, materials, machines, systems, and patterns of organization. Its application will involve, among many other things, the work of specialists working at all levels throughout the educational system. Without question, it also means changes in the school curriculum, in the role of the student, the role of the teacher, and the programs of teacher education.

Education is a matter of individual human growth and development; therefore technological methodology must be introduced with care. Our primary concern is and must be the individual human personality—the nurturing of social and moral values, and, perhaps more to the point in our case, the development of rational thinking, of intellectual competence, of responsible action, and of productive ability. Such development involves the transmitting (teaching) and mastering (learning) of a great deal of information and many complex skills. The degree to which technological media and systems can extend the efforts of professional workers in this endeavor is a matter of extreme timeliness and a major concern.

That films, TV, electronic learning laboratories, programed materials, graphic displays, and similar media can enhance learning and extend the range of a good teacher is an established fact. That expanded development of such media in coordination with curriculum can further contribute to both productivity and quality in instruction is a reasonable assumption. To bring about this expansion and to direct the effort in a manner consistent with our goals and our understanding of how children grow and learn is a challenge to the entire profession.

Only recently have we begun to discover the philosophical framework or the modes of application which seem to make the extensive use of technological media appropriate to education. This framework has been constructed through painstaking research and practice—widely reported in the professional literature. There must now be generated within the profession a desire to extend this capability.

American public schools have been under severe criticism during recent years. Some of the most vocal critics have not always demonstrated that they are in full possession of all the pertinent facts. However, it is not possible to gloss over all the charges or to wave them aside with indifference. The magnitude of the educational operation and its real significance is actually a concern for national survival.

One of the facts not fully comprehended is the dramatic increase in enrollment at every level. The mere provision of physical facilities in which to house this increasing number of students is a problem of impressive proportions. Equally as obvious, but not always sufficiently considered, is the problem of finding and educating an adequate number of teachers to meet these requirements. All available reports indicate that we are failing by substantial numbers to meet the demand for new teachers. An NEA study indicates that the average public school teacher spends about 43 percent of her time on duties other than classroom instruction.

Added to the factors of increased enrollments and inadequate and overburdened staffs is the rapidly expanding body of knowledge in every subject-matter field. Many examples could be cited to highlight the significance of this problem and the challenges it presents. Every area of teaching competence from physics through reading to individual counseling has advanced in scope and complexity within the last decade or so and promises to continue to do so in the years just ahead.

During the past 10 years, industry has developed automated random-access filing and other storage-retrieval systems to alleviate somewhat parallel problems. Schools, however, are almost wholly unaware of such approaches.

On other fronts American public school systems have been making great efforts to meet their problems. Expenditures per-pupil have been increasing steadily and probably will continue to increase. The cost per pupil was slightly over $200 in 1950, while in 1960, just 10 years later, it has risen to approximately $400. Most of the additional expenditure has been devoted (in increasing but inadequate amounts) to salaries, student services, additional classrooms, and finally, if funds remained, to equipment and instructional materials. As educational expenses continue to mount, the public can be expected to express increased concern. If we are to obtain satisfactory financial support, we must be prepared to show that every effort has been made to incorporate effective and efficient methods in our schools.

The examples of modern medicine, industry, and business which devote major attention to capital investment in tools and hardware, and to research and development, must give us pause. At the turn of the century, according to Harold Clark, Columbia University economist, both industry and education distributed its capital outlay for new buildings in a ratio of three quarters for the shell of the building and one quarter for the tools to be used by the occupants. Today the ratio has been reversed for industry—a quarter for the building, three quarters for the tools—but the ratio for educational structures continues for the most part unchanged.

In 1958 the total capital outlay in education was $2,850,000, mostly for construction. The investment in audiovisual equipment was about six-tenths of 1 percent of this amount. We must now face the question of whether to continue this technological lag or to seek the strength for a really significant advance.

A technological culture, by definition, is one that finds technological solutions to its problems. This means that the environment of the technological culture which contributed to the problems of education also contains the elements that can help to solve them. Through the efforts of pioneering American educators working in cooperation with elements of the industrial and military communities, a body of knowledge and an arsenal of communication tools and materials have been developed with which we may begin to work. There has also been accumulated in the public school systems of the United States a limited body of experience in the application of technological devices and materials to instruction.

The time has now come to apply everything known about communication and learning to the problems of instruction in the public schools. A decision to take this step means a massive infusion of technological capital and personnel into the system as well as a massive program of research and development. It means the creation and application of a technology of instruction based on the sciences of learning and communication.

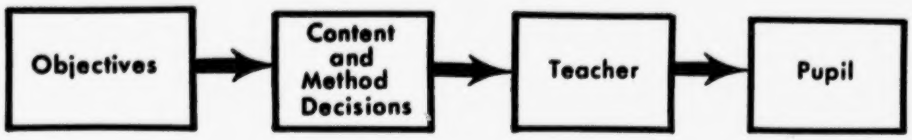
In summary, a technological leap forward is required in education. The decision of any school system to attempt this leap must be made in relation to certain assumptions:

- Present instructional programs are inadequate to meet certain obvious needs of students who will grow up and work in the world of the 1960's and seventies.
- A new technology for instruction has been developed and proved through basic research and practice. This development has now reached a level that will permit rapid expansion of application and of further innovation.
- The new educational technology is capable of meeting and solving certain of the school's major problems in instruction, organization, and administration.
- Application of the new technology will result in major changes affecting the administration, organization, and physical facilities of the public schools.
- Methods of instruction will be modified to a major degree, particularly in the presentation of information.
- Teachers and learners will have new roles and changed activities as a result of this technological change.
- A new kind of professional will be required to provide leadership in design, implementation, and evaluation of programs of education which make the fullest use of new media. The functions performed by this leader and the resources he brings will be among the essential determinants of success or failure in tomorrow's schools.

The Function of Media

TRADITIONAL INSTRUCTION

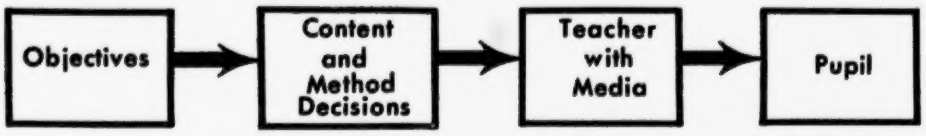
The direct teacher-pupil relationship as a means of organized instruction may be thought of in terms of this diagram:



This is the traditional arrangement, and although printed materials, chalk, and a few other devices come into play, there is no real technology involved.

MEDIA FUNCTION NO. 1

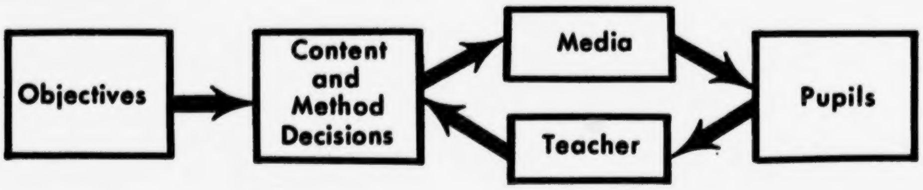
Today, teachers in many school systems have learned to make effective use of a supplementary channel for learning with such materials as films, TV programs, and programed instruction sequences to increase the breadth and depth of learning. **The first function of technological media is to supplement the teacher through enhancing his effectiveness in the classroom.**



Learning occurs as a result of direct contact with things or manipulation of things; and as a result of vicarious experiences through seeing, hearing, conversing, reading, thinking, and responding emotionally as well as intellectually. The teacher provides for these experiences and in so doing uses a variety of media. Educational media are defined here as those things which are manipulated, seen, heard, read or talked about, plus the instruments which facilitate such activity. **Educational media are both tools for teaching and avenues for learning, and their function is to serve these two processes by enhancing clarity in communication, diversity in method, and forcefulness in appeal. Except for the teacher, these media will determine more than anything else the quality of our educational effort.**

MEDIA FUNCTION NO. 2

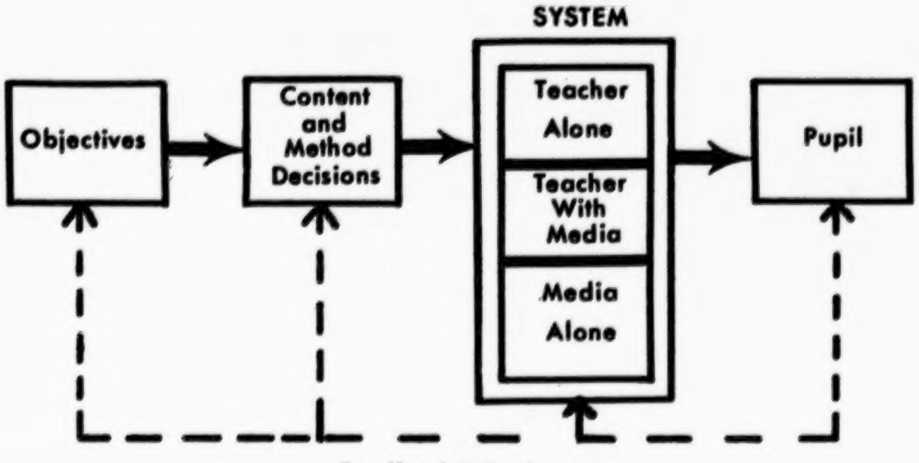
Some teachers have begun to utilize another channel for learning in which the media alone may present and, in a sense, teach certain content to pupils. **Here, the teacher determines objectives, selects methods and content, and evaluates the final learning outcomes. The presentation of information, and even the direction of routine pupil activities, may be turned over to such new media as programed learning materials, television, or motion pictures.**



The Harvey White films on physics or the Science Research Associates' programed textbooks on Modern Mathematics, for example, not only present subject matter but also guide students through a sequence of learning experiences. Teaching as executed by modern media such as these replaces some traditional teaching activities that were formerly the sole responsibility of the teacher.

INSTRUCTIONAL SYSTEMS

The newer media have led us to a new approach to instruction. This is a scientifically developed combination of instructors, materials, and technological media for providing optimum learning with a minimum of routine personal involvement by the teacher. The result is a carefully planned system consisting of subject matter, procedures, and media coordinated in a program-unit design which is directed toward specific behavioral objectives. A variety of learning channels are combined in such a system. Decisions as to where and how to use teacher presentation, discussion, media presentation, programed learning sequences, or other channels will be made in terms of what and who is to be taught.



Feedback & Evaluation

This concept of a systems approach to instruction demands our earnest attention. It is not proposed as a finished model but as a point of departure for development of systems design in public education. No such model exists as yet. We have seen some of the rudiments of this in the work of the Physical Science Study Committee with Jerrold Zacharias, the Modern Language Project with George Borglum, and the technamation project at the University of Wisconsin. Some scattered efforts have been attempted at coordinating programed instruction with other media and with teacher interaction. The "Trump plan" for secondary-school operation offers a climate for systems development in that it overcomes the regimen of conventional schedules and class size.

Function No. 2, then, is to enhance overall productivity through instructional media and systems which do not depend upon the teacher for routine execution of many instructional processes or for clerical-mechanical chores. These systems will not be appropriate to every phase or purpose of the curriculum, but they offer the promise of vastly-increased productivity in many instructional tasks. Their introduction will necessarily be gradual and must be accompanied by significant increases in the schools' technological capability.

More specific functions within and beyond these two general ones will be indicated as we review the role of the media specialist.

Chapter III

STAFF AND FUNCTIONS OF THE DIVISION OF EDUCATIONAL COMMUNICATIONS NEW YORK STATE EDUCATION DEPARTMENT

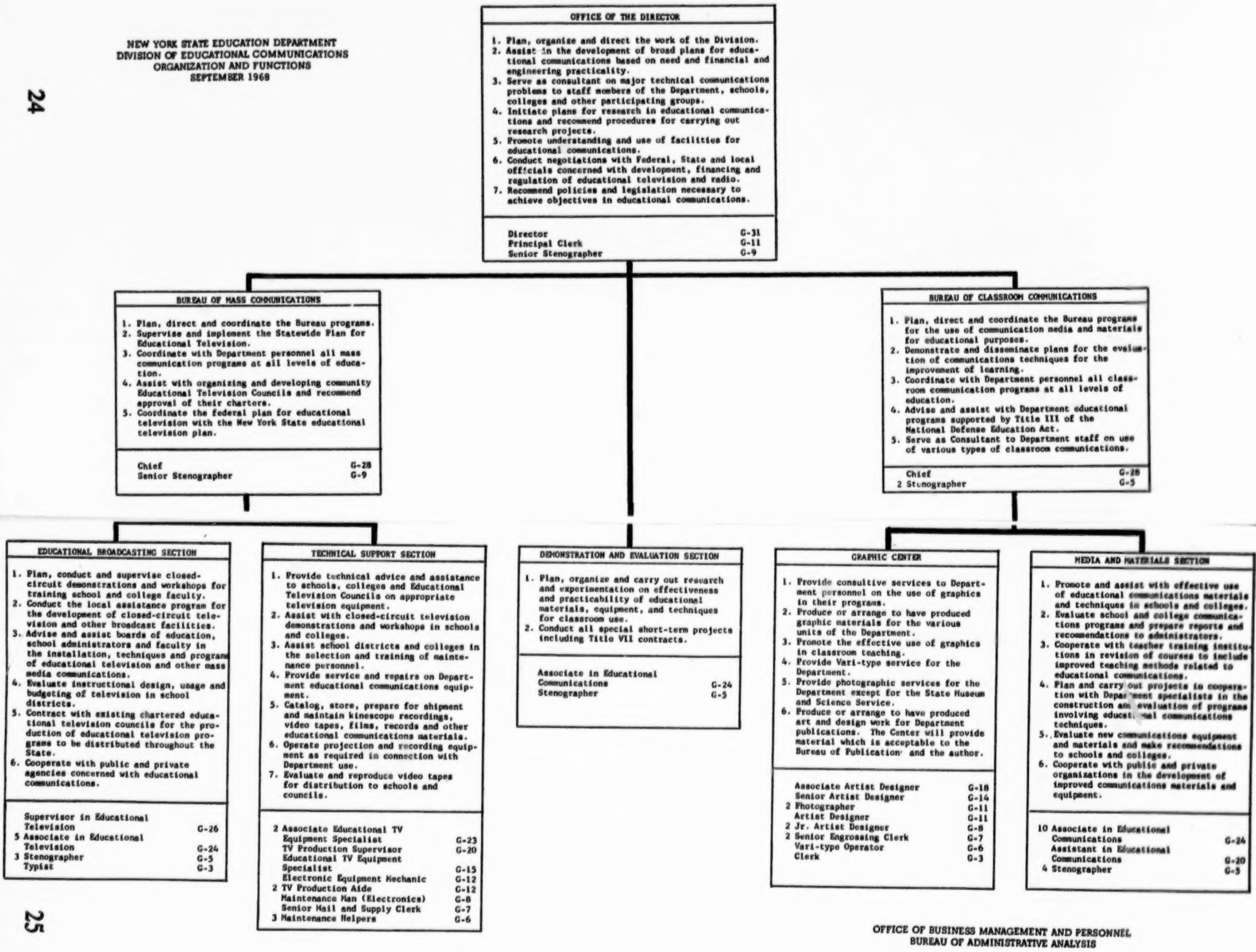
The development of educational communications media for the improvement of instruction and the provision of educational communications services is recognized as an important function of the Education Department. The complexity and variety of media available for communicating instructional information requires special consideration to insure that these media contribute effectively to the implementation of educational policies.

The offices of Educational Communications contribute to the improvement of instruction through a continuous search for new and improved materials, equipment, techniques, and methods of educational communications and their application in education. These offices also contribute to the operations of other units of the Department and to the schools, colleges, adult and cultural education programs of the State by providing consulting, technical and administrative services of an educational communications nature. Since all units of the Department use the results of educational communications developments and educational communications services, the educational communications office operates under the Associate Commissioner for Cultural Education.

SPECIAL SERVICES OF THE DIVISION OF EDUCATIONAL COMMUNICATIONS

The rapid development of new educational communications media such as educational television, teaching machines, programed instruction, language laboratories, and computer instruction makes it necessary for the Department to assist educators in analyzing trends, developing plans and specifications and acquainting teachers and administrators by the use of dissemination techniques. Associates in the Division are assigned special areas for consultant services.

NEW YORK STATE EDUCATION DEPARTMENT
DIVISION OF EDUCATIONAL COMMUNICATIONS
ORGANIZATION AND FUNCTIONS
SEPTEMBER 1968



OFFICE OF THE DIRECTOR

1. Plan, organize and direct the work of the Division.
2. Assist in the development of broad plans for educational communications based on need and financial and engineering practicality.
3. Serve as consultant on major technical communications problems to staff members of the Department, schools, colleges and other participating groups.
4. Initiate plans for research in educational communications and recommend procedures for carrying out research projects.
5. Promote understanding and use of facilities for educational communications.
6. Conduct negotiations with Federal, State and local officials concerned with development, financing and regulation of educational television and radio.
7. Recommend policies and legislation necessary to achieve objectives in educational communications.

Director	G-31
Principal Clerk	G-11
Senior Stenographer	G-9

BUREAU OF MASS COMMUNICATIONS

1. Plan, direct and coordinate the Bureau programs.
2. Supervise and implement the Statewide Plan for Educational Television.
3. Coordinate with Department personnel all mass communication programs at all levels of education.
4. Assist with organizing and developing community Educational Television Councils and recommend approval of their charters.
5. Coordinate the federal plan for educational television with the New York State educational television plan.

Chief	G-28
Senior Stenographer	G-9

BUREAU OF CLASSROOM COMMUNICATIONS

1. Plan, direct and coordinate the Bureau programs for the use of communication media and materials for educational purposes.
2. Demonstrate and disseminate plans for the evaluation of communications techniques for the improvement of learning.
3. Coordinate with Department personnel all classroom communication programs at all levels of education.
4. Advise and assist with Department educational programs supported by Title III of the National Defense Education Act.
5. Serve as Consultant to Department staff on use of various types of classroom communications.

Chief	G-28
2 Stenographer	G-5

EDUCATIONAL BROADCASTING SECTION

1. Plan, conduct and supervise closed-circuit demonstrations and workshops for training school and college faculty.
2. Conduct the local assistance program for the development of closed-circuit television and other broadcast facilities.
3. Advise and assist boards of education, school administrators and faculty in the installation, techniques and programs of educational television and other mass media communications.
4. Evaluate instructional design, usage and budgeting of television in school districts.
5. Contract with existing chartered educational television councils for the production of educational television programs to be distributed throughout the State.
6. Cooperate with public and private agencies concerned with educational communications.

Supervisor in Educational Television	G-26
5 Associate in Educational Television	G-24
3 Stenographer	G-5
Typist	G-3

TECHNICAL SUPPORT SECTION

1. Provide technical advice and assistance to schools, colleges and Educational Television Councils on appropriate television equipment.
2. Assist with closed-circuit television demonstrations and workshops in schools and colleges.
3. Assist school districts and colleges in the selection and training of maintenance personnel.
4. Provide service and repairs on Department educational communications equipment.
5. Catalog, store, prepare for shipment and maintain kinescope recordings, video tapes, films, records and other educational communications materials.
6. Operate projection and recording equipment as required in connection with Department use.
7. Evaluate and reproduce video tapes for distribution to schools and councils.

2 Associate Educational TV Equipment Specialist	G-23
TV Production Supervisor	G-20
Educational TV Equipment Specialist	G-15
Electronic Equipment Mechanic	G-12
2 TV Production Aide	G-12
Maintenance Man (Electronics)	G-8
Senior Mail and Supply Clerk	G-7
3 Maintenance Helpers	G-6

DEMONSTRATION AND EVALUATION SECTION

1. Plan, organize and carry out research and experimentation on effectiveness and practicability of educational materials, equipment, and techniques for classroom use.
2. Conduct all special short-term projects including Title VII contracts.

Associate in Educational Communications	G-24
Stenographer	G-5

GRAPHIC CENTER

1. Provide consultive services to Department personnel on the use of graphics in their programs.
2. Produce or arrange to have produced graphic materials for the various units of the Department.
3. Promote the effective use of graphics in classroom teaching.
4. Provide Vari-type service for the Department.
5. Provide photographic services for the Department except for the State Museum and Science Service.
6. Produce or arrange to have produced art and design work for Department publications. The Center will provide material which is acceptable to the Bureau of Publication and the author.

Associate Artist Designer	G-18
Senior Artist Designer	G-14
2 Photographer	G-11
Artist Designer	G-11
2 Jr. Artist Designer	G-8
2 Senior Engrossing Clerk	G-7
Vari-type Operator	G-6
Clerk	G-3

MEDIA AND MATERIALS SECTION

1. Promote and assist with effective use of educational communications materials and techniques in schools and colleges.
2. Evaluate school and college communications programs and prepare reports and recommendations to administrators.
3. Cooperate with teacher training institutions in revision of courses to include improved teaching methods related to educational communications.
4. Plan and carry out projects in cooperation with Department specialists in the construction and evaluation of programs involving educational communications techniques.
5. Evaluate new communications equipment and materials and make recommendations to schools and colleges.
6. Cooperate with public and private organizations in the development of improved communications materials and equipment.

10 Associate in Educational Communications	G-24
Assistant in Educational Communications	G-20
4 Stenographer	G-5

OFFICE OF BUSINESS MANAGEMENT AND PERSONNEL
BUREAU OF ADMINISTRATIVE ANALYSIS

Division of Educational Communications
The State Education Department
Albany, New York 12224

Telephone Directory:	
Division Director	518:474-5974
Bureau Mass Communications	474-5823 5824
Bureau Classroom Communications	474-5825 5826
Graphics	474-6039 5479
Technical Support	474-8189
Cinelib (Film collection for teacher training)	474-3168

	Person Responsible for Area	
Special Areas	**Primary**	**Secondary**
Aid to School TV	R. Graf	B. Cooper
BOCES	D. Rees	G. Blanco
Certification	R. Milkman	L. Twyford
Cinelib (Teacher Training)	W. Ryan	D. Rees
Closed Circuit TV	R. Graf	W. Humphrey
Closed Circuit TV (Technical)	W. Humphrey	
Classroom Responders	L. Twyford	D. Rees
Computers	W. Ryan	L. Twyford
Convocation	C. Bailey	L. Twyford
Cooperative Review	R. Milkman	L. Twyford
Culture (Project CUE)	G. Lacy	L. Campion
Curriculum Liaison	C. Bailey	L. Twyford
8mm Films	D. Rees	G. Blanco
Film Evaluations	W. French	L. Twyford
Films	D. Rees	G. Blanco
Filmstrips	P. Morrison	C. Bailey
Graphics Center	G. Blanco	L. Twyford
Instructional Materials	P. Morrison	C. Bailey
Instructional Technology	W. French	L. Twyford
Kits	C. Bailey	L. Twyford
Overhead Projectors	G. Blanco	C. Bailey
Placement Service	R. Milkman	C. Bailey
Programed Instruction	W. Ryan	L. Twyford
Proposals	(See specific titles)	(See specific titles)
Reading Devices	C. Bailey	W. Ryan
School Building Design (AV)	G. Blanco	D. Rees
School Building Design (TV)	R. Graf	W. Humphrey
State Contracts	D. Rees	G. Blanco

Special Areas	Person Responsible for Area	
	Primary	Secondary
Tapes (audio)	W. Ryan	B. Cooper
Teaching Machines	W. Ryan	L. Twyford
Title I ESEA—Media aspects	W. Flannigan	L. Twyford
Title II ESEA—Media aspects	P. Morrison	W. French
Title III ESEA—Media aspects	W. French	P. Morrison
Title VI Higher Education Facilities—Media aspects	R. Milkman	L. Twyford
Title VI Higher Education Facilities—Television aspects	B. Cooper	R. Milkman
Title III NDEA—Media aspects	W. French	P. Morrison
Title VII NDEA—Media aspects	L. Twyford	L. Campion
TV in Higher Education	B. Jensen	B. Cooper
TV Councils	G. Bates	B. Cooper
Television Systems—Technical 2500 Megahertz TV, Closed Circuit, Video Tape, etc.	W. Humphrey	R. Graf
Video Tapes Utilization, programming, etc.	B. Cooper	B. Jensen

Chapter IV

EDUCATIONAL COMMUNICATIONS PERSONNEL

THE ROLE OF THE MEDIA PROFESSIONAL IN EDUCATION *

The growing educational needs of society are causing unprecedented interest in and support of educational innovation. This has brought about in schools new relationships involving academic disciplines, behavioral science, communication technology, school personnel, and students. These new relationships among people, theories, and things are producing improved learning, more efficient use of human resources, and major changes in the materials, facilities, and techniques of instruction.

It is in this context that the role of the media professional in education is changing from that of a keeper and dispenser of curriculum aids to that of an analyst and designer of instructional systems who must be concerned with a process which involves the planning of learning environments, and providing for related support functions and evaluative procedures.

This paper sets forth the emerging role of the media professional, the unique contribution which he makes to contemporary education, the nature of the tasks he is currently performing at various educational levels, and the nature of his professional preparation. Although it was prepared by one segment of the educational media profession, the basic philosophy of this paper transcends a narrow view of media in an effort to relate media to the total needs of education.

TECHNOLOGY IN THE MODERN SCHOOL

Of all the changes taking place in American society, none is more extensive or important than change in education. Here, rapid expansion, coupled with critical shortages and urgent need for change, has led to a growing realization that the schools must be more amply served by good teachers, and that good teaching, under modern conditions, requires adequate technological support. Also of great importance is the shift of attention from the teacher (as "imparter" of information) to the learner as the focal point of the education process—a shift which frees the teacher for a more creative role, and frees the learner for more active participation coupled with a higher level of personal involvement in the direction of his own learning tasks. Hence, a modern instructional technology must be suited not only for group presentations by teachers, but also for a variety of independent study activities by students.

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* A Position Paper prepared for the Board of Directors of the Department of Audiovisual Instruction, National Education Association.

The resources for learning in the new school include not only the conventional library and audiovisual materials but also many newer resources such as programed materials, 8mm. films, television, student response systems, dial access information retrieval facilities, computers, and others. Also, the newer media can no longer be regarded merely as instructional aids or enrichment but are recognized as integral and essential components of the instructional program.

THE ROLE OF THE MEDIA PROFESSIONAL

With educational programs taking on these new directions, the role of the media professional becomes more clearly defined. Teachers, curriculum and supervisory personnel, and administrators work together closely as teams to examine, appraise, and redesign instruction in a more systematic way. Each member of the team has important functions to perform, and he quickly finds that with the variety and complexity of media available, plus the need to plan and prepare additional materials locally, a key member must be a professional whose special skills relate directly to the selection, creation, and management of materials and media. There is also a trend toward the planning of instructional systems on a comprehensive scale in which the media professional plays a critical role.

Specifically, the media professional

1. Works with appropriate educational leaders to design learning experiences and to recommend both commercial and locally prepared instructional media/materials suited to specific instructional objectives
2. Assumes responsibility for the logistics of instruction, e.g., arranges for making available, or for planning and preparing, specific materials and related equipment
3. Works directly (or indirectly) with teachers, supervisors, and students to implement the program

4. Participates in the continual evaluation, redesign, and production of instructional materials, media, and systems

THE EMERGING SHAPE OF THE MEDIA FIELD

. . . .

. . . .*

Educational communication has always had a technological aspect, but the revolutionary technical changes of this century have radically altered and expanded this aspect of teaching so that we are now confronted with a new field of inquiry and professional specialization. This field has gradually emerged through the related efforts of specialists working in audiovisual education, in libraries, in educational broadcasting, in schools of communication, in psychological laboratories and classrooms, in programed learning, and in the planning of instructional systems. It has emerged through the organization and administration of programs of instructional services, through research, through the development and application of a greatly enlarged spectrum of media and materials to the processes of instruction. In view of these circumstances, it should be apparent that no existing professional specialization, nor any professional association, has an exclusive claim to the emerging field of educational communications and technology, other than the willingness and competence of its members to accept and deal with the challenge of its critical tasks.

QUALIFICATIONS AND FUNCTIONS OF THE MEDIA PROFESSIONAL

Whether he is the sole member of a school or school systems media services program, or directs an extensive staff, the services of the media professional must be based on:

1. Insight into learning and communication processes
2. Understanding of curriculum and new instructional patterns
3. Ability to inspire and gain the respect of other professional staff members
4. Skill in the management of media services
5. Comprehension of the broad spectrum of technology in educational communications and its place in education

Finally, the field of educational communications and technology can best be defined by noting the functions which comprise the contemporary tasks of media specialists, and media generalists, working at various levels in education. The following list is descriptive of the services that such media professionals offer education. Like all professional tasks, the following have their technical and clerical aspects which may be distributed among the various appropriate staff members whose services support the work of the media administrator and other professionals in the program.

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* The first two paragraphs of this section were omitted because they were concerned with the name for the field. New York State has adopted the term education communications.

Media Professionals in the Individual School

Functions are to:

1. Consult with teachers regarding the use of a wide range of media in the solution of instructional problems
2. Supervise the circulation and scheduling of instructional materials and equipment, and the ordering of equipment and materials from sources outside the school
3. Prepare teaching materials
4. Assist with selection of equipment and materials, as appropriate to the local organization of media services
5. Provide inservice education for teachers in selection and use of instructional materials and techniques, usually on a person-to-person or small-group basis
6. Supervise training of students and teachers in operation and use of equipment
7. Maintain liaison and coordination with district-level media services
8. Marshal extra school instructional resources
9. Help students use the technology of instructional communication
10. Assist teachers and administrators in evaluating the results of the use of instructional materials and technological resources for teaching

Media Professionals Functioning at the Multischool Level, in District, County, or Regional Programs

On the multischool level, duties are to:

1. Coordinate selection and evaluation of instructional materials and teaching resources (including community resources for teaching and learning, media indexes, special bibliographies, etc.)
2. Manage the organization, distribution, and maintenance of instructional materials and equipment
3. Work with teachers, psychologists, and content specialists in the design and production of teaching materials to supplement those commercially available and those produced at the building level

4. Work with administrators, curriculum specialists, supervisors, and teachers in the design and implementation of instructional systems, with particular regard to the implementation of communication functions
5. Conduct experimentation and evaluation of media programs and projects
6. Develop media budget and monitor its expenditure
7. Determine staff requirements and participate in the selection, training, and supervision of para-professional, professional, clerical, and technical personnel
8. Plan for space and facilities required to house audiovisual, television, and other media services
9. Provide optimum physical conditions for utilization of media in the planning of new buildings and the remodeling of old
10. Keep school administrator and supervisory staff informed of new technological developments related to teaching and instructional communications
11. Maintain liaison with other supervisory staff, with state and national media personnel, and with professional associations
12. Participate in planning and assist in coordinating the linking of communications functions within the school system to external communication systems at the state, regional, and international (satellite) levels

PREPARATION REQUIRED

The individual preparing for a professional career in educational media has the choice of specializing in such fields as audiovisual, library science, broadcasting, or moving toward a more comprehensive approach to the broad area of educational communications and technology. While it seems reasonable to anticipate an increasing demand for *both* professionals with intensive specializations, and those who may be required to deal with more highly integrated programs, it may be that technological trends will tend to reduce or eliminate some of the separations we have known in the past, and thus move toward patterns of graduate training with an increasing number of common elements for all who intend to work in the field of instructional communications and technology. Generally, those performing the functions listed above will require graduate study including at least the following elements in addition to their general education and basic professional training:

1. Utilization and evaluation of educational media and materials
2. Design and production of various types of instructional media
3. Organization of media collections
4. Administration and supervision of media programs
5. Applications of various types of technologies to instruction

6. Communication, learning, and perception theories as related to media and the utilization of instructional materials in education
7. Curriculum development and recent instructional trends at the preschool, elementary, secondary, collegiate, and/or adult levels
8. Development of supervisory and inservice education activities

In addition to the general preparation areas identified above many specialists will be required who will pursue further study in one or more of the following fields:

- Advanced elements of librarianship
- Information science
- Advanced elements of educational broadcasting
- Program instruction
- Instructional systems
- Computer-assisted instruction
- Behavioral research

CERTIFICATION OF DIRECTORS OF EDUCATIONAL COMMUNICATIONS IN NEW YORK STATE

Directors of educational communications in New York State school districts are now being certified. Although certification is not required until September 1, 1969, the certification regulations are beginning to have an impact upon communication programs. Boards of cooperative educational services that are establishing Educational Communications Centers are required to have persons who are certified or certifiable before a program can be undertaken. Such certification will be required of each person serving more than 25 percent of his time in a position as administrator or supervisor of an educational communications program. The director of educational communications is classified in the administrative and supervisory category of instructional administrator-supporting services. The director of research is also included in this category.

Any person serving one or more of the following media functions must be certified: (1) Is responsible for the development, coordination or supervision of media activities which support the instructional or the total educational program, (2) Supervises other professional media personnel, (3) Aids in the inservice education and the performance appraisal of staff of the communications program.

To obtain a certificate the candidate must hold a permanent teaching certificate and must have completed at least 3 years of teaching experience. In addition, he must complete a program registered by the Department as suitable for certification *or* he must complete 60 hours of graduate study. The 60 hours must include 6 hours of the fundamentals of administration, 15 hours of educational communications administration courses, up to 6 hours of internship and 33 hours of additional graduate study. Graduate schools in New York State are currently planning graduate sequences leading to certification. Full time experience as an audiovisual director may be substituted for the internship and the semester hours required for it.

Persons serving in the position of director of educational communications may continue in the position after September 1, 1969 by obtaining a Statement of Continuing Eligibility. He must have completed 3 years of service prior to September 1, 1969 and hold a permanent New York State teaching certificate. This so-called "grandfather clause" is valid in any New York State school district. An interim certificate may be issued where the individual lacks no more than six semester hours of study for the certificate. The interim certificate is valid for 1 year and may not be renewed.

After 2 years of certified experience as director of educational communications the individual may serve in other positions in the same category such as director of research. School authorities are thus given the privilege of moving a person, after an initial period of service, to responsibilities for which he shows interest, preparation and special qualifications. The certification standards are minimum requirements. Such standards, by themselves, cannot provide assurance of a candidate's competence. In addition, school districts are encouraged to seek recommendations from college officials and conduct further investigation as to the competence and potential effectiveness of each candidate. In addition, the cities of Buffalo and New York City are required by law to use a competitive examination system for the selection of personnel, all of whom are required to have not less than that required for State certification.

The preferred route to certification is based on evidence of completion of an approved program of collegiate preparation. In New York State, collegiate programs of teacher education are approved on the basis of documentation by the institution and registered when supported by evidence gained through a personal visit to the campus by a representative of the Department. The certification requirements serve as guidelines to higher institutions building programs of preparation for school personnel. The New York State Education Department then issues appropriate certificates to graduates of higher institutions who complete an approved program and are recommended for certification by the institution. Although most approved programs will be in higher education institutions in New York State, out-of-State higher education institutions may also request registration of their programs. The following is the exact wording of portions of the certification regulations.

AMENDMENT TO THE REGULATIONS OF THE COMMISSIONER OF EDUCATION

Pursuant to Section 207 of the Education law effective September 1, 1969, Sections 119 through 130 of Article XV of the Regulations of the Commissioner of Education repealed and a new Section 119 adopted in place thereof, to read as follows:

§ 119. (80.4) **Certificates Valid for Administrative and Supervisory Service.**

1. *Certificate Required.*

Persons serving in positions requiring the certificate of School District Administrator or School Business Administrator shall hold the appropriate certificate. A person serving more than 25 percent (10 periods per week) of his time in a position requiring certification in one of the other functional categories listed below shall hold the appropriate certificate.

2. *Functional Categories of Administrative and Supervisory Service.*

Any person by whatever title whose position entails any of the responsibilities described below shall be required to hold the appropriate certificate.

………

……………………………………………………………………………

e. INSTRUCTIONAL ADMINISTRATOR-SUPPORTING SERVICES. (Illustrative titles: Director of Research; Audio Visual Coordinator; Director of Educational Communications)*

Any person who serves one or more of the following functions shall hold the certificate as INSTRUCTIONAL ADMINISTRATOR-SUPPORTING SERVICES:

(1) Is responsible for the development, coordination, and supervision of activities which support the instructional or the total educational program.

(2) Supervises other professional personnel of the particular supporting program.

(3) Aids in the inservice education and the performance appraisal of staff of the particular supporting program.

………

4. *Preparation Required for a Certificate*

To obtain a certificate for administrative and supervisory service, a candidate shall meet either of the following requirements. The Commissioner may accept equivalent work that, in his opinion, clearly meets the intent of this Section.

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* Administrators of Pupil Personnel Services are specifically exempted from inclusion in this Section.

a. *Completion of a program registered by the Department*

Complete preparation at and be recommended by an institution or institutions having a program for the preparation of one or more of the functional categories of administrative and supervisory personnel approved and/or registered by the State Education Department.

b. *Alternate completion of requirements*

Sixty semester hours of graduate study beyond the baccalaureate degree shall be required for a certificate in any of the functional categories named above. The sixty semester hours shall include:

(1) Study in the *fundamentals of administration* designed to provide an overview of the basic concepts of administrative and supervisory theory and practice.

(2) A *specialization* emphasizing the problems and practices related to one of the specific functional categories previously identified.

(3) An *internship* which is a continuous experience under supervision by a practicing administrator and by a representative of a sponsoring higher institution. Equivalent full-time experience in an administrative or supervisory position may be substituted for the internship and the semester hours assigned thereto.

(4) *Additional Study* including following:

(a) Advanced study in the behavioral sciences and other liberal arts.

(b) Study appropriate for a permanent teaching certificate.

(c) *Advanced study* in the social, philosophical, and psychological foundations of education. The following table identifies semester hours for programs of preparation by functional categories:

(1) Fundamentals of Administration	(2) Specialization	(3) Internship	(4) Additional Study	Total
6	15	0-6	33	54-60

5. *Exceptions to Stated Preparation*

a. Statement of Continued Eligibility

(1) Persons employed in a position for which no certificate existed prior to the effective date of this section of Regulations may be issued a Statement of Continued Eligibility, provided that three years of service have been completed by the date these requirements become mandatory.

(2) The validity of a Statement of Continued Eligibility shall be limited to the specific area of service for which it is issued, but may be valid in any school district.

(3) The candidate for the Statement of Continued Eligibility shall hold a permanent teaching certificate valid in New York State.

b. Interim Certificate

An interim certificate may be issued to a candidate employed in any functional category (except School District Administrator) who lacks no more than six semester hours of study for the Certificate. The candidate must provide a statement by the employing school district administrator giving:

(1) Specific reasons why employment is in the educational interests of the district. This information is to be submitted by the employing officer prior to employment.

(2) Assurance by the employing officer that adequate supervision will be provided.

The interim certificate shall be valid for one year from date of issuance and may not be renewed.

8. *Prerequisite Certificate*

The candidate shall hold a permanent teaching certificate at a level appropriate for the administrative-supervisory certificate sought. Such a teaching certificate must be valid in New York State or in another state. An out-of-state certificate must be based upon a program of preparation substantially equivalent to that required by New York State. [For the certificate as Instructional Administrator-Supporting Services, a permanent certificate in any area of pupil personnel services may be used to satisfy this requirement.]

9. *Experience*

Prior to the issuance of a certificate under this section of the Regulations, the candidate shall have completed at least three years of teaching experience.

Approved Program

The content of the 60 hour program of graduate study which leads to the certificate as instructional administrator-supporting services is as follows:

Study in the fundamentals of administration:

The modern study of administration is based upon research in the behavioral sciences particularly sociology, political science, psychology and anthropology. University programs include courses in these behavioral sciences and school administration itself has been strongly influenced by the research of social scientists. Courses in school administration are no longer solely concerned with the mechanics of the operation of schools. They are concerned with the problems of people living and working in organizations, the power relation among individuals and groups, the psychological variables in the behavior of both the administrator and the administered, the difficulties in allocation of economic resources, the politics of individual and group relations, the sociology of the classroom, the analysis and improvement of teaching, new developments in educational technology, the roles of participants in educational organization and related groups, the elements of school climate that produce maximal learning, the leadership role of administration. Graduate education in administration stresses the importance of determining the purposes of organization, establishing a high level of morale of both students and teacher, utilizing people as creative human beings, and changing the school as the need arises.

Study in the fundamentals of administration is intended to develop understanding of the following areas: Organization of Education in America; Concepts and Processes of Administration; Theories of Administration and Organization; Community Interrelationships; The Educational Program: academic, vocational, technical, and others; Personnel and Staffing, Funds and Facilities; Education Law; Educational Research and Evaluation.

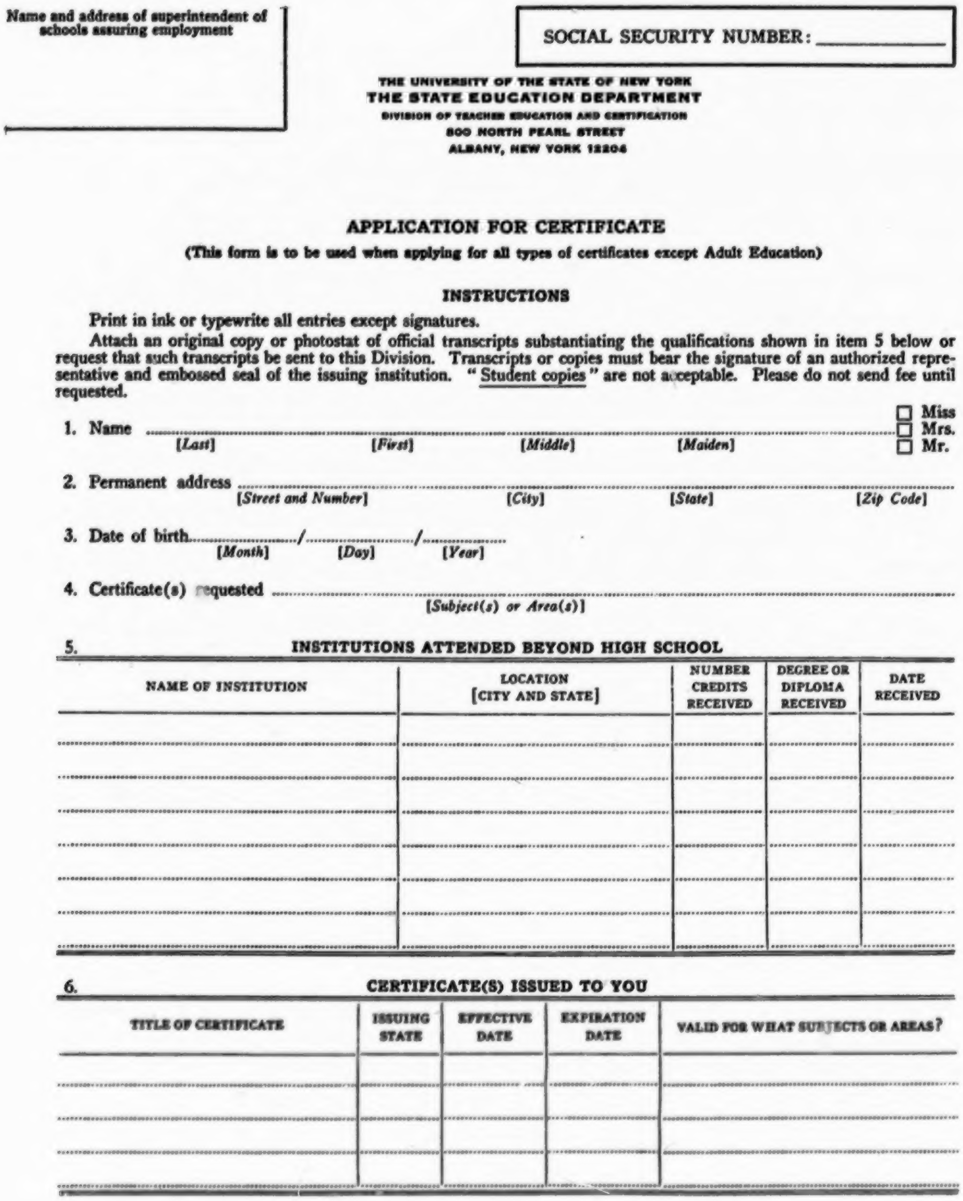
INSTRUCTIONAL ADMINISTRATOR—SUPPORTING SERVICES

In addition to the fundamentals of administration, preparation should be completed which will assure the development, coordination, and supervision of specialized educational activities whose primary purpose is to support and augment the instructional program. Preparation should provide an understanding of the employment, assignment, and supervision of school personnel; the inservice education of staff; the maintenance of proper and useful records and reports, etc.

Regulations concerning certification of administrative and supervisory personnel as well as application forms are available from:

The Division of Teacher Education and Certification
The State Education Department
800 North Pearl Street
Albany, New York 12204

People serving as directors of educational communications (or audiovisual directors or audiovisual coordinators) should seek certification at the earliest opportunity.



Name and address of superintendent of schools assuring employment

SOCIAL SECURITY NUMBER: ____________

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
DIVISION OF TEACHER EDUCATION AND CERTIFICATION
800 NORTH PEARL STREET
ALBANY, NEW YORK 12204

APPLICATION FOR CERTIFICATE

(This form is to be used when applying for all types of certificates except Adult Education)

INSTRUCTIONS

Print in ink or typewrite all entries except signatures.

Attach an original copy or photostat of official transcripts substantiating the qualifications shown in item 5 below or request that such transcripts be sent to this Division. Transcripts or copies must bear the signature of an authorized representative and embossed seal of the issuing institution. "Student copies" are not acceptable. Please do not send fee until requested.

1. Name .... *[Last]* *[First]* *[Middle]* *[Maiden]* ☐ Miss ☐ Mrs. ☐ Mr.

2. Permanent address .... *[Street and Number]* *[City]* *[State]* *[Zip Code]*

3. Date of birth ..../........../.......... *[Month]* *[Day]* *[Year]*

4. Certificate(s) requested .... *[Subject(s) or Area(s)]*

5. INSTITUTIONS ATTENDED BEYOND HIGH SCHOOL

NAME OF INSTITUTION	LOCATION [CITY AND STATE]	NUMBER CREDITS RECEIVED	DEGREE OR DIPLOMA RECEIVED	DATE RECEIVED

6. CERTIFICATE(S) ISSUED TO YOU

TITLE OF CERTIFICATE	ISSUING STATE	EFFECTIVE DATE	EXPIRATION DATE	VALID FOR WHAT SUBJECTS OR AREAS?

(Reverse side of form on opposite page)

7. **TEACHING, ADMINISTRATIVE AND/OR SUPERVISORY EXPERIENCE**

NAME OF SCHOOL	LOCATION	SUBJECTS, GRADES, OR AREAS TAUGHT, SUPERVISED, OR ADMINISTERED	DATES	
			From	To

8. **OCCUPATIONAL OR PRACTICAL EXPERIENCE**

(Applicants for certification as attendance teacher, guidance counselor, distributive education teacher, school nurse-teacher, or school dental hygiene-teacher — describe below any employment you have had exclusive of teaching.)

NAME OF EMPLOYER	ADDRESS	POSITION HELD	DUTIES	DATES	
				From	To

9. **CITIZENSHIP**

Are you a citizen of the United States?..............If not, attach your original copy of your Declaration of Intention.

10. **ADDITIONAL INFORMATION**

A. Have you ever been arrested for or convicted of a criminal offense (with the exception of minor traffic violations)?.............. If so, please attach copies of court records, including disposition of case.

B. Have you ever had a teaching certificate revoked?.............. If so, please indicate on a separate sheet the reasons for the revocation.

11. **AFFIDAVIT**

Under penalties of perjury, I declare and affirm that the statements made in the foregoing application, including accompanying statements and transcripts are true, complete, and correct.

.... *Date*

.... *Signature of Applicant*

STAFFING FOR EDUCATIONAL COMMUNICATIONS

Director of Educational Communications

The position of the director of educational communications is certified at the administrative level. The director works with people and programs as well as with materials and equipment. The director is the coordinator of all phases of the educational communications program and works directly under the chief administrator responsible for instruction.

There are many functions which only a media specialist can perform within a school district in relationship to teachers, students, and parents. He is responsible for the evaluation, selection and classification of existing nonprint materials and the instructional equipment required for use of the materials. In order to guarantee maximum benefits from the program, one must understand the unique role which such materials and equipment serve in the learning process. This task goes beyond the identification of materials from a standard list or catalog. Materials are selected by a director working with a team of qualified persons to fit the needs of teachers and students. He then works with curriculum planners and teachers in the utilization of available materials and services. Another major function of the director is his responsibility for the planning and designing of new materials. Existing materials must frequently be modified and adapted to meet the needs of a particular classroom, a group of learners, or an individual learner. The media specialist understands the design of messages and the preparation of programs in order to create new materials, methods, and techniques.

The new certification title of Director of Educational Communications reflects the expanded role of the former audiovisual director. His work may now encompass television, programed instruction, language laboratory and media facilities, public relations, graphics and photography as well as media research proposals for federal funds. In his administrative position, he may supervise specialists in each of these areas. These specialists may in turn aspire to the position of Director of Educational Communications.

In order to accommodate the differences in size and administrative patterns found in the schools in New York State, the guidelines are presented at three levels:

- A district center responsible for serving more than one location
- An independent school or a single school within a district
- A classroom

ACTIVITIES OF THE DISTRICT DIRECTOR OF EDUCATIONAL COMMUNICATIONS FOR CITY, VILLAGE OR REGIONAL CENTERS

The responsibilities and duties defined here are general. A school should select or modify the position to fit the individual needs of the school district. The administration should be aware of the responsibilities assigned to the director of educational communications and supply supporting staff where needed.

Supervision

The director of educational communications:

1. Maintains liaison with other supervisory staff (librarians, curriculum directors, principals, department heads, school coordinators, etc.) with state and national media personnel, and with professional associations
2. Coordinates evaluation and selection of nonbook resources (in-

cluding community resources for teaching and learning, development of media indexes, special bibliographies, etc.)

3. Keeps school administrator and supervisory staff informed of new technological developments
4. Assists with the interpretation of school-system policies to the public where media can be of assistance

Administrative and Organizational Services

The director of educational communications:

1. Develops budget and handles staffing for educational communications
2. Organizes and administers the educational communications program for the district
3. Is responsible for the leadership in carrying out the program in his field as set up by the school administration and for adapting this program to the needs of the school district
4. In the absence of broadcast specialist, the director serves as coordinator of radio and television instruction activities

Teacher and Pupil Services

The director of educational communications:

1. Conducts workshops and other inservice education activities for teachers, media specialists, etc., in the use of technology to improve the methodology of instruction (usually in group situations)
2. Conducts experimentation and evaluation of media projects and programs
3. Organizes professional collections of audio-visual references, periodicals and catalogs
4. Prepares news letters and bulletins to keep all school personnel informed of innovations in the field and within the school district

Technical Services

The director of educational communications:

1. Carries a major responsibility for design of instructional systems and their implementation (logistics, etc.)
2. Provides for media needs in the planning of new buildings and the remodeling of existing facilities
3. Manages organization, distribution, and repair of educational communications resources
4. Supervises the linking of a school district with an inter-communication network
5. Is responsible for the storage and distribution of instructional materials and equipment in the schools

Production

The director of educational communications:

1. Supervises production of additional teaching materials to supplement those commercially available and those produced at the building level
2. Stimulates and participates in the local production of films, slides, transparencies, tape recordings, etc.

3. Supervises and is responsible for the services and equipment used to prepare instructional materials both at the center and in individual schools

Cultural and Community Resource Services

The director of educational communications:

1. Assists with interpretation of school system policies to the public where media can be of assistance
2. Coordinates evaluation and assists in the utilization of community resources for teaching and learning
3. Organizes and administers a Cultural Resources Program for the school
4. Provides photographs and other resources for public relations programs

SUPPORTING STAFF FOR A DISTRICT PROGRAM

Personnel Guidelines

In a large or medium-size school system, a supporting staff might have responsibility for:

- Television
- Motion Pictures
- Programed Instruction
- Graphics

One, or the equivalent, semiprofessional assistant (technician, graphic artist, clerk, photographer, etc.) should be provided for each 30 teachers. The number of technical assistants and the location of the position in the organizational pattern depend on the size of the district and the development of the educational communications program.

As one examines the organization of programs found at the district level and in individual schools, it is evident that in addition to a director of educational communications a number of persons with specialized training and experience will be required. Full-time professionals are required at the district level and full- or part-time professionals are required at the building level. They are responsible for coordinating materials, equipment and services to meet the instructional communications needs. Paraprofessionals with special technical skills and training are required to perform many of the functions necessary for servicing and handling the materials and equipment. In some schools, student assistants can be trained to operate equipment and produce certain kinds of materials.

PARAPROFESSIONAL TECHNICIAN

Educational requirements:

- Graduation from a 2-year technical college
- Graduation from senior high school

  and

  One year of full time paid experience acquired within the last 10 years in the operation, repair and maintenance of slide, filmstrip or opaque projectors and/or 16 mm sound motion picture equipment; and other audio equipment, or a satisfactory equivalent combination of related experience and technical education beyond the high school level
- Related technical education will be credited on a month-for-month basis for acceptable experience

DUTIES AND RESPONSIBILITIES

Under supervision, the technician performs work of ordinary difficulty and responsibility in the operation and maintenance of visual and sound equipment.

Performs related work as follows:

- Transports equipment
- Operates and maintains equipment
- Cleans and splices films
- Trains students in the operation and maintenance of educational equipment
- Requisitions supplies and equipment
- Provides technical help to students using educational equipment for independent study
- Assists teachers in using media for large group instruction

	At All Levels:
The School Media Aide	District Center School Building Classroom

EDUCATIONAL REQUIREMENTS

It is obvious that there is a wide-range of skills, concepts and attitudes that need to be mastered by many different categories of persons operating at many different levels, ranging from no formal education in the area to highly developed skills. School aides should be selected on the basis of their skills and their interest in educational communications. For example a person with a background in art would be very helpful in a production center. Unskilled aides can be trained to do many of the jobs required at a center, thus allowing the professional personnel more time to work with teachers and students.

DUTIES AND RESPONSIBILITIES

The functions which might be performed by aides are as follows:

- Assist edcom coordinator with inventory control of equipment and materials
- Assist edcom coordinator with the routine procedures involved in film acquisition, distribution and return
- Assist teachers for large group instruction using equipment
- Supervise students at independent study using equipment
- Assist teachers in producing materials for classroom use
- Assist with the receipt and processing of requests for materials
- Mailing or delivery of films to local film centers
- Circulation of notices initiated by edcom coordinator
- Filing and general clerical procedures involved in administering the edcom program
- Assist edcom coordinators and teachers with arrangements for auditorium programs
- Assist with the distribution and return of educational equipment and materials
- Assist in storing and filing collections of tapes, discs, filmstrips, flat pictures, slides and other materials
- Assist with the housekeeping involved in keeping the storage facilities in operable condition
- Help edcom coordinator maintain attractive bulletin boards of information
- Assist edcom coordinator in setting up special exhibits
- After some training—help splice film and tape, oil and clean equipment and mount flat pictures
- May perform other tasks as skills and competencies are acquired
- Process orders for materials from sources outside the school district

Student Assistants	Operators Club Camera Club Student Helpers

TRAINING

Many school systems carry on a program of training students to operate equipment and to work with cameras. Students help is also available in schools under Federal programs where the students can be trained to do many of the clerical and minor technical duties required to operate a program in educational communications.

DUTIES AND RESPONSIBILITIES

Students can be trained to perform the following duties:

- Operate equipment
- Maintain a projectionist's club and assist in the training of other students

- Aid in the production of teaching materials such as bulletin boards, charts, posters, and transparencies
- Participate in the activities of a camera club

STAFFING FOR SPECIAL SERVICE PROGRAMS

Television, Independent Study, Production

Any person spending more than 25 percent of his time in supervision or administration of a program in educational communications must be certified as a director of educational communications. The college credits earned and the professional experience in specialized areas are related to the skills required to perform the duties of a supervisor or director of special areas, such as, television, programed instruction, production, and research.

The general duties are the same as for the director of educational communications with special duties in the assigned area of responsibility. Activities that can be assigned or shared with additional professional people are as follows:

- Supervise and direct the production of materials for use in the classroom such as transparencies, teaching tapes, filmstrips, films and television production
- Organize and operate a central media collection or a film library
- Assist teachers in the development and creation of needed but unavailable resources
- Assist teachers in establishing new programs or innovations
- Coordinate and help in the full utilization of the community resources

EDUCATIONAL TELEVISION FOR A DISTRICT

The rapid growth of educational television and the development of new equipment has resulted in a variety of organizational patterns. It must be recognized that the size of the district and the scope of the program will determine the staff and their responsibilities. Personnel and duties may differ for projects in large schools and for educational broadcast facilities. The staff and responsibilities listed are minimum requirements for a television project that has justified these staff members. In conjunction with the positions listed below, it is assumed that additional personnel in the school district would contribute to the televised lessons. The members of the art department are responsible for the graphics, the English department helps with the script and the presentation.

Director of Educational Communications or TV Curriculum—Utilization Coordinator

A professional person is needed to organize and assist in the administration of the television project. The responsibilities and duties of this position are assigned to the director of educational communications or may require a full time coordinator. Ideally, the person in charge should have training and experience in school administration, curriculum, and the administration of a televised instructional program. The emphasis of this position is curriculum and instruction rather than production or equipment operation.

Responsibilities of the director include:

1. Identification of general and specific areas in the curriculum in which locally produced or pre-produced materials brought to the classroom via television can make a contribution to the learning process
2. The investigation and evaluation of existing materials that can be purchased or rented for distribution by television
3. The identification and approval of what is to be locally produced
4. The coordination with administrative and academic heads in the final selection and scheduling of television programing
5. Supervision of the development and distribution of supplemental materials to be used by classroom teachers before and after televised instruction (teacher guides, etc.)
6. Assistance to the teaching staff in the development of proper utilization techniques of televised lessons in the classroom
7. Supervision of the evaluation of the effectiveness of the program, responsibility for modification of program content and scheduling of showings

TELEVISION PRODUCER-DIRECTOR
(Program Director)

For this position, training and experience in the following areas is recommended: 1. Formal (college level) training in communications, 2. At least 4 years of experience in the production and direction of radio and television programs.

Responsibilities of the producer-director include:

1. Supervisory responsibility for television production and distribution of programs
2. Supervisory responsibility for production and distribution of local materials whether live or on video tape for distribution to classroom receivers
3. Responsibility for the training and supervision of student support personnel necessary for program production and distribution (cameramen, production assistants, floor managers, audio-control men, video tape recorder operators, film chain operators, etc.)
4. Responsibility for coordination of faculty involved in program production such as instructors in graphics arts who will strongly support the television operation
5. Supervision for full and part-time engineering and maintenance personnel. (In order to operate facilities at the district level there should be a full-time engineer with appropriate Federal Communications Commission licenses which are required.) A part-time or backup staff member is required to help during peak operating time and when illness or other unforeseen absences make it impossible for the full-time engineer to be on the job.

TELEVISION ENGINEER

The position of television engineer demands a First Class Federal Communications Commission license and ideally should require at least 5 years of experience in an educational radio and/or television technical position.

Responsibilities of the engineer include:

1. Fulfillment of Federal Communications Commission legal requirements for the operation and maintenance of a 2,500 Megahertz system
2. Responsibility for the maintenance of all production equipment including cameras, video tape recorders and related equipment
3. Participation in a training or laboratory course for student workers in electronics in which television equipment is utilized as the project core

BUILDING COORDINATOR

A building coordinator is recommended for school systems of three buildings or more to which an intensified TV program is being directed for 3 hours or more per day.

Responsibilities of the coordinator:

1. Coordinate with the district director of educational communications or the person responsible for the television program, the needs and requests of the teachers
2. Aid the director to carry on the inservice training and general orientation of teachers to the medium and assist in utilization of television materials in the classroom
3. To indicate to the head coordinator, director or engineer, the requirements for individual room service
4. To act as liaison with teachers on evaluation, feedback, and basic planning of programs to be made available to teachers in specific content areas and at particular grade levels

STAFFING THE EDUCATIONAL COMMUNICATIONS PROGRAM FOR A SCHOOL BUILDING

Personnel Standards

In schools with 15 teachers or less—1 half-time specialist.

In schools with 16 to 30 teachers—1 full-time audiovisual specialist.

Add one audiovisual specialist for each additional 40 teachers or major fraction thereof.

One or the equivalent, semiprofessional assistant (technician, graphic artist, clerk, photographer, etc.) for each 30 teachers.

ORGANIZATION OF PROGRAMS

In establishing an educational communications program at the building level two organizational patterns must be kept in mind:

- A single, self-contained, independent school responsible for the complete program
- A school that is part of a system and receives services from a district or regional center

The recommendations for a program at the building level will depend largely on the services provided by the district center. Regional or district organizations provide a variety of services to individual schools, such as a film library, a production or graphics center, technical support, television, and radio. The evaluation and acquisition of educational materials and equipment are usually the responsibility of the district center.

CERTIFICATION

Any person who serves one or more of the following functions in an educational communications program shall hold the certificate for a director.

1. Is responsible for the development, coordination and supervi-

sion of activities which support the instructional or the total educational program
2. Supervises other professional personnel of the particular supporting program
3. Aids in the inservice education and the performance appraisal of staff of the particular supporting program

The educational requirements are the same as for the district director.

If more than 25 percent (10 periods a week) of the time is spent on the supervision and administration of the program, then he must be certified as a director of educational communications.

The person given educational communications responsibility in a single school should be selected for qualities of leadership, background in modern teaching techniques, knowledge of educational materials and equipment and interest in the field. As his duties become greater he should be given the authority, the time and supporting staff to perform the duties necessary for an effective instructional program using media.

TITLE

The person in charge of a program at the building level should be called a building director. Other titles, such as, supervisor, coordinator or audiovisual teacher are sometimes used in districts having special or advanced programs. The important points to consider are the services and responsibilities of the position and their effect on the instructional program.

ACTIVITIES OF THE BUILDING DIRECTOR OF EDUCATIONAL COMMUNICATIONS

The duties and responsibilities of the building director listed here are those needed for a single school when additional services are provided by a district center. The administration should provide the staff materials, equipment and the facilities necessary to carry on the responsibilities of the position.

In starting a program for a single school that must provide a complete program, it is recommended that the activities assigned to the district director be combined with the duties and responsibilities of a building director. From this list, the administration should then select the services that will best meet the needs of the instructional program in the individual school.

ADMINISTRATIVE AND ORGANIZATIONAL SERVICES

The building director of educational communications:

1. Organizes the school educational communications program
2. Organizes facilities for the educational communications program including space for local production, storage, repair and maintenance, previewing, administration and special projects
3. Organizes the distribution of equipment and materials
4. Catalogues all materials including filmstrips, slides, tapes, disc recordings, flat pictures, etc.
5. Keeps continuous inventory control of all equipment and materials
6. Organizes systems for receiving and processing teacher requests
7. Organizes program for training and using pupil assistants
8. Organizes procedures for communicating with school personnel via newsletters, bulletins, bulletin boards and routing systems
9. Helps to organize programs to communicate the progress of the edcom program to the community
10. Organizes and coordinates the use of the central sound system and auditorium
11. Assists in providing materials for the orientation of parents and pupils to the school

TEACHER TRAINING

The building director of educational communications:

1. Teaches methods, techniques, and operation of all nonprint media
2. Provides workshops to present demonstrations of utilization procedures, methods and equipment
3. Provides workshops on local production of simple materials
4. Offers consultative services to teachers, specialists and supervisors
5. Assists teachers in setting-up classrooms for improved methods using media
6. Provides presentations to faculty on methods and utilization techniques
7. Offers special courses to instruct school personnel
8. Works with grade leaders in the selection of materials appropriate to grade level and course-of-study requirements
9. Provides classroom demonstrations of media utilization upon request from teachers
10. Keeps teachers informed of available materials

TECHNICAL SERVICES

The building director of educational communications:

1. Provides minor repair services such as projection lamp changes, phonograph cartridge changes, tape head cleaning, exciter lamp changes, fuse changes, belt replacement

2. Provides periodic preventive maintenance of equipment as required to insure maximum efficiency and safety
3. Arranges for major repair of equipment
4. Keeps records of repairs and maintenance
5. Maintains accessory materials such as electric power cords, etc. in safe condition

LOCAL PRODUCTION

The building director of educational communications directs production of:

1. Flat picture collections
2. Tape recordings
3. 2"x2" slide sets and filmstrips
4. Large transparencies for the overhead projector
5. 8mm. single concept films
6. Coordinated materials on recommended topics such as slide and tape combinations
7. Photographs for course of study implementation and for public relations
8. Bulletin boards, exhibits and displays
9. Specialized materials as requested by school personnel as needs arise

PUPIL INSTRUCTION

The building director of educational communications:

1. Teaches specially prepared lessons on listening, vocabulary and concept development, film, television and radio utilization, and appreciation, and other communications skills
2. Teaches large groups and provides assistance in planning auditorium, and team teaching programs
3. Teaches small groups using specialized methods, materials, and equipment
4. Organizes special programs using multimedia approaches to improve reading skills
5. Teaches photographic skills to pupils in camera clubs
6. Teaches pupils in service squads

CULTURAL RESOURCE SERVICES

The building director of educational communications:

1. Coordinates auditorium presentations
2. Helps teachers with special effects, sound and lighting in the preparation of assembly programs
3. Arranges for inschool presentations of performing arts groups
4. Assists teachers in arranging for visits to special performances of the performing arts after school hours
5. Helps the teacher broaden cultural experiences of pupils through film lessons and special programs

2 OF 4

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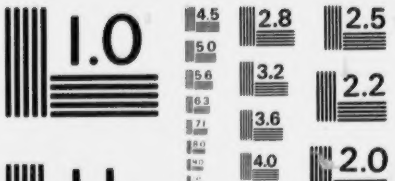
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

AREAS IN A SCHOOL BUILDING THAT REQUIRE SERVICES OF THE BUILDING DIRECTOR

The School

The recognition of individual psychological differences, along with increasing student populations, has challenged the ingenuity of educators and psychologists to provide learning facilities. To meet these problems, a vast array of media and specialized instructional materials have been developed to provide an efficient means for instruction and learning.

As new teachers, trained in using instructional equipment, enter the profession, and, as the program develops, it is no longer economical or feasible to centralize all materials and equipment. When equipment and materials are in abundant supply a decentralized mode of operation with equipment and materials at a building level is very practicable. To meet the daily needs of teachers and students, materials and equipment must be available and be organized and located where it is required. This type of service can best be organized and carried on at the school level by the building director.

The educational communication program supervises or services the following areas:

- Educational communications center
- Graphic communications
- Learning laboratories
- Spaces using equipment for learning
- Curriculum implementation

EDUCATIONAL COMMUNICATIONS CENTER

The functions performed in an educational communications center will determine its size. The functions may differ from school to school depending upon the physical facilities and the services received from a district center or other outside sources.

The recommendations are general and a school should select or modify them to meet individual needs.

Equipment and Materials

The bulk of the equipment needed for classroom use in any building should be assigned permanently to the building. All heavy pieces such as 16 mm. projectors should be either permanently installed or placed on movable carts and located on the floor where it will be used. Carrying heavy equipment up and down stairs is hazardous.

2

To perform the services appropriate to a school center the following equipment is required:

1. Backup equipment for emergencies
2. Stock of spare parts for minor repairs
3. Equipment to service 16mm. film
   a. rewind
   b. splicer
   c. film editor

All instructional equipment in a school is assigned to and serviced by the school coordinator. The State guidelines can be useful in determining the amount and kinds of equipment recommended for a basic program. In addition to the portable equipment used for instruction, specialized pieces of equipment are required in many areas of a school building. These include:

1. Equipment required for innovations and special projects
2. Dial access
3. Radio and television facilities
4. Public address system

MATERIALS FOR INSTRUCTION

The edcom center is responsible for the housing and distribution of instructional materials. Filmstrips, records, tapes, etc. may be assigned to designated teachers or teaching stations or may be housed in the center. Items include:

1. Films (owned and rented)
2. Filmstrips
3. Records and transcriptions
4. Charts
5. Maps, globes
6. Flat pictures
7. Materials for bulletin boards and felt boards
8. Models
9. Objects
10. Specimens
11. Multimedia kits
12. Tapes

GRAPHIC COMMUNICATIONS

Local production of instructional material can provide many needed materials for teachers that are otherwise unavailable. The most important task is to decide which items are appropriate to meet teaching requirements and can be produced in the school center. A school production area provides the materials and equipment necessary to make simple instructional items for the teacher. The most common activities carried on in the center involve:

1. Tapes—production and duplication, editing, splicing, and erasing
2. Lettering—use of devices and prepared letters to produce charts, posters or display items
3. Construction—materials and supplies to make models, exhibits, maps, bulletin boards and flannel board displays
4. Photography—copying of prints and slides, enlarging still pictures, production of filmstrips, 8mm. films and slides
5. Reproduction—materials and equipment to make transparencies and multiple copies of instructional materials

LEARNING LABORATORY

In the present day educational program, meeting the needs of individual students is of prime importance. Completely modern and fully equipped independent study facilities that include viewing as well as listening and recording devices have been proposed by various authorities. Such installations may be separate facilities or may be located in other areas of the building, such as, the library or in a special department. However, the selection and operation of equipment and the servicing of the "soft-ware" required to operate such a program are the responsibility of the school building director.

As the program develops and sufficient funds are provided, numerous materials should be made available for student use with some use by teachers. The following items are relatively inexpensive and are recommended for independent study areas:

1. Card catalog
2. 8mm. films
3. Slides
4. Filmstrips
5. Tapes
6. Records
7. Still pictures
8. Charts
9. Media kits
10. Maps and globes

SPACES FOR LEARNING

Due to the growth of technology and the increase in money available for instruction many programs using complicated equipment have developed. The building director of educational communications in a school is responsible for:

1. Public address system (may be located in principal's office but

the operation is usually the responsibility of the edcom department)

2. Radio and television studio
3. Auditorium
4. Learning laboratories for special work such as reading or science
5. Electronic classrooms
6. Independent study carrels using equipment
7. Special classrooms using equipment
   a. team teaching
   b. research, innovations

CURRICULUM IMPLEMENTATION

The school coordinator can furnish valuable service to subject area specialists and teachers in preparing lesson plans, special projects, guides and scripts. This section of a school center promotes good use of media and provides adequate orientation and information when and where needed. This center provides:

1. Storage of texts, guides, etc.
2. Materials to help plan lessons using media
3. Space for preview of materials
4. Special media and ideas for team teaching
5. Instruction in use and operation of equipment
6. Follow-up visits to help the teacher in the classroom
7. Distribution of materials and equipment
8. Special assistance to substitute or part time teachers
9. Training for teacher aids and student assistants
10. Information and materials for special teachers such as reading consultants and teachers of retarded children

Chapter V

SOURCES OF MEDIA FUNDS

ESEA Title I

GENERAL INFORMATION

Title I of the Elementary and Secondary Education Act of 1965[1] is the major thrust of the national effort to "bring better education to millions of disadvantaged youth who need it most." The Congress has made available more than $1 billion for each year starting with the first year (1965-66) of this title.

PURPOSE

The purpose of the new law is to:

- Strengthen elementary and secondary school programs for educationally deprived children in low income areas
- Provide additional school library resources, textbooks, and other instructional materials
- Finance supplementary educational centers and services
- Broaden areas of cooperative research
- Strengthen State departments of education

Actual funds are provided through a separate appropriations bill.

ADMINISTRATIVE RESPONSIBILITIES

Local Educational Agencies

The local educational agency is responsible for developing and implementing approved projects to fulfill the intent of Title I. It is therefore responsible for identifying the educationally deprived children in areas where there are high concentrations of children from low-income families, for determining their special needs, for designing projects to carry out the purposes of the legislation with regard to such children, and for submitting applications to the appropriate State educational agency for grants to fund proposed projects.

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[1] Public Law 89-10.

MEDIA SUPPORT OF ESEA TITLE I PROJECTS

Of special interest to directors of educational communications is the role that media can play in the effective support of projects for the disadvantaged. To ensure effective media support to the schools, professionally qualified educational communications personnel can render valuable assistance when serving as a member of the Planning Committee for ESEA programs. The Director of Educational Communications is familiar with the materials and media available in each school. He is also aware and has access to information concerning specific materials and equipment suited to particular teaching-learning situations. He is a most valuable resource person and can render professional advice and assistance in the selection of audiovisual materials and equipment to program directors, coordinators, school administrators, supervisors, and teachers.

Of particular interest to the director of educational communications are two sections of the ESEA Title I. Proposed Project Budget —FA-10-1.

(1) 200 (*Instruction*) D. Audiovisual materials (not equipment) used in the instructional program.

Description of Item	**Quantity**	**Proposed Expenditures**
1. Films, Filmstrips and Transparencies		
2. Tapes and Recordings		
3. Maps, Charts, and Globes		
4. TV and Radio Materials		
	Subtotal	$ (200D)

Note: As a member of the planning team for ESEA programs, the professional educational communications person's recommendations in this area are invaluable. After thoroughly familiarizing himself with the program to be implemented, he carefully estimates the materials needed to support the particular program, and then, after researching the resources available, recommends the purchase of the necessary materials.

Also:

(2) 1230 Equipment

Initial or additional items of equipment, such as furniture, furnishings, machinery, and vehicles, that are not integral parts of the building or building service. Repairs and piece-for-piece replacements of equipment are not pertinent here; these pertain instead to the 700 series, Maintenance of Plant.

Any and all equipment purchased in support of this project with a unit cost of $50 or more should be itemized in this category.

Item	**Proposed Quantity**	**Unit Cost**	**Proposed Expenditures**
		Subtotal	$ (1230)

Note: Again, professional assistance is required in this area. The educational communications person familiar with the program and recommending the necessary materials (under 200D) can now follow through and recommend the equipment necessary to effectively utilize the media materials in the support of the educational program.

SUMMARY AND SUGGESTIONS

1. ESEA Title I funds are *not* intended as general aid to education.
2. ESEA Title I funds are *not* allocated to supplant local funds.
3. Materials and equipment must be reasonably related to the number of children in the project and units costing over 50 dollars must be itemized listing the unit price, make, etc. Do not hesitate to write in the program just how and why the materials and equipment will be needed.
4. In describing the project, hit hard and continuously on the "target" children—not and all fifth graders will receive, etc.
5. Directors of educational communications should get in on the action early—know your federal projects coordinator—try to serve on a planning committee for all project planning. It is almost inconceivable that an ESEA Title I project would not need media support of some kind.

ADDITIONAL INFORMATION

For specific information concerning the technical and administrative procedures of ESEA Title I, call or write the office of:

Coordinator, Title I ESEA
The State Education Department
Room 367, Annex
Albany, New York 12224
Phone: 474-5623

For additional information regarding specific media aspects of ESEA Title I, call or write:

ESEA Title I Coordinator for Media
The State Education Department
Division of Educational Communications
Bureau of Classroom Communications
Room 260, Annex
Albany, New York 12224
Phone: 474-5825

ESEA—TITLE II

The Elementary and Secondary Education Act of 1965, Public Law 89–10, is designed to strengthen and improve educational quality and educational opportunities in the Nation's elementary and secondary schools. Title II of the Act recognizes that teaching programs have become increasingly dependent upon effective school library resources and services and other printed and published instructional materials. The presence of Title II in this Act is based upon considerable evidence that the school libraries and other learning/instructional centers of the Nation and of this State are widely in need of improvement, and that book and nonbook instructional materials of high quality and appropriateness are needed in greater abundance.

Title II of the Act provides that such instructional and learning materials should be made readily available on an equitable basis for the use of the children and teachers in all schools, public and private, which provide elementary and secondary education as determined under State law, but not beyond grade 12. Since Title II is designed to benefit children and not schools, its benefits extend to children attending proprietary as well as non-profit schools. Funds made available under this title must be used to supplement and, to the extent practical, increase the level of State, local, and private school funds for resources, and in no case may they be used to supplant such funds.

Title II authorized New York State to make grants to public school districts and other public agencies for a five-year period beginning July 1, 1965 and ending June 30, 1970. The authorization for New York State for fiscal year 1967 and 1968 was approximately $8.7 million. Authorizations for the succeeding three years will be decided upon by the Congress in future sessions. This is a 100 per cent Federal grant program; no State or local matching funds are required.

A *Planning Guide for ESEA—Title II* is prepared annually to explain how public agencies may avail themselves of the opportunities provided by Title II, to clarify Federal and State regulations governing Title II, and to provide necessary guidance for participation in the Title II program in New York State. Each superintendent, supervising principal and Title II coordinator in the State receives a copy of the publication in early fall. Additional copies are available upon request. The advisory services of the Department's administrative and supervisory staff are available upon request to assist with planning and application activities, and for the efficient use of funds. Contact either the Bureau of School Libraries (Coordinator of Title II—ESEA) or the Bureau of Classroom Communications (for audiovisual liaison) or both for information and assistance.

The State Education Department reserves the right under the State Plan to make final determination as to the suitability and approvability of all resources acquired under Title II. The *Planning Guide* provides complete information of eligibility, how to participate, making application (including sample forms), eligible and ineligible materials, grant programs (with priorities and criteria), selection criteria, standards, evaluation procedures, final guidelines, annual reporting, and many other pertinent areas.

An outstanding feature of the State's Title II program has been the Special Purpose Grants. The 30 grants awarded the first year and the 61 grants of the second year are explained in the first two annual reports called *Library and Multimedia Projects*. Copies of this publication are available upon request from the Department.

With this background we believe it would be worthwhile to remind you of the following pertinent and important considerations:

1. The educational communications specialist should be involved in all planning and carrying out of projects which involve audiovisual materials.
2. There should be a balance of book and nonbook materials to implement the curriculum.
3. Standards for materials need to be established and implemented according to the Division's recent suggested educational communications standards.
4. Selection procedures need to be improved for audiovisual materials. Criteria and methods for evaluation are suggested in the State guidelines for Title II—ESEA. Cooperation is mandatory between teachers, educational communications specialists, librarians, and curriculum experts.
5. The increased interest in, and trend toward, IMC's has stressed the need to describe and define the concept and to identify the

competencies and responsibilities of the educational communications specialist and the librarian.

6. Disseminating information on successful programs is imperative. Two annual publications, LAMP, which describe specific locations and programs for Title II Special Purpose Grants, are steps in this direction.
7. The educational communications specialist is instrumental in helping administrators, teachers, librarians, and curriculum experts to keep abreast of new technological developments and in identifying changing roles as they relate to Title II ESEA.

There is no doubt about it, the creative thinking and action which have taken place in carrying out Federal projects of the past few years have surpassed and supplanted the traditional instructional programs. If Federal funds were cut tomorrow, programs would be continued because they have worked. Local districts will continue to maintain effort and develop new programs.

ELEMENTARY AND SECONDARY EDUCATION ACT P.L. 89–10

Title III ESEA

A force for educational change to prepare young Americans to meet the challenges of a complex age is provided through Title III of the Elementary and Secondary Education Act of 1965. This program, known as PACE (Projects to Advance Creativity in Education) is intended both to support vitally needed supplementary services and to encourage innovative and exemplary applications of new knowledge in schools throughout the Nation. As a program of supplementary services, PACE encourages communities to find creative solutions to their educational problems, utilizing all available cultural and educational resources. Support of innovative and exemplary programs is designed to create an awareness of educational need and stimulate formulation of imaginative programs, rather than simply to meet the needs themselves.

Title III, under some general guidelines, should interest the director of educational communications in two categories:

Creative Curriculum Improvement

Visionary Planning of Facilities

Using other Federal titles to augment a Title III ESEA Project is encouraged. Title III encourages innovation and educational technology in general constituting one of the most innovative changes in education in this century. The educational communications person needs to indicate where the newer media can be used because his is a unique position of knowing where educational communications can best [illegible] the particular situation. Title III ESEA will provide the building facilities and personnel to handle media for curriculum improvement. Equipment *per se* is not included except for a supplementary educational center which cannot secure equipment in other ways. In addition, Title I and Title II funds may sometimes be used for obtaining a greater variety of media materials than can be obtained with Title III funding.

New York State Regional Centers are designed for the purpose of directing Title III project development. A list of these Centers is available from the Center on Innovation, The State Education Department, Albany, New York 12224.

For further information and help in designing your projects contact:

Division of Educational Communications
The State Education Department
Albany, New York 12224

NATIONAL DEFENSE EDUCATION ACT, P.L. 85–864

NDEA Title III

The following information concerning the NDEA III program is called to the attention of educational communications directors.

The enrichment of instruction in one or more of the critical subject areas is the primary objectives of Title III NDEA. This is an acquisition program involving approved equipment, materials and/or minor remodeling. Enrichment means that the projects proposed, and the items requested to implement the projects, will provide instruction which is over and beyond that which is ordinarily provided. The size, staffing and economic status of the school district involved in each proposed project may also enter into the meaning of the term enrichment.

A project is a specific and clear-cut proposal by a school district to do something which will aid in the upgrading of instruction in one or more of the critical subject areas. The project must necessarily be well planned and completely documented as to what it is proposed to do, why, where, when, and how.

Preference is given to projects which emphasize the use of media in classrooms as spelled out in the paragraph below.

These must be *enrichment projects* related to one or two critical subject areas (with actual grade level and course names specified within the subject area) and should provide:

- Both immediate and long term instructional improvement
- Assurance that full use will be made of local resources such as outstanding personnel, museums, and laboratories (both indoor and outdoor)
- For implementation by requesting items which are suitable in type, quantity, and durability
- Adequate, well scheduled pupil participation with well-trained teaching personnel, suitably housed
- Evidence to show qualitative improvement of instruction

1967–68 Program. A Congressional amendment has added "industrial arts" as the 10th critical subject area to be covered under this program. Districts are presently advised to limit their 1968–69 NDEA planning to one or two critical subject areas in order to provide greater concentration of funds rather than attempt to cover all the critical areas.

Title III NDEA of 1958 (extended in 1968) covers science, mathematics, history, civics, economics, geography, modern foreign languages, English, reading and industrial arts. Title III was designed to provide financial assistance to the public schools, on a 50–50 matching basis, to purchase prior-approved equipment, materials, and to provide minor remodeling to strengthen instruction in the critical subject areas.

Media specialists need to work with subject supervisors of the critical areas in order to promote the extended use of educational communications. The task can't be undertaken without the cooperation of curriculum specialists because of the requirement that specific, scheduled classroom use be made of any materials purchased pursuant to this law.

A Title III, NDEA *Planning Guide* is available in the Spring of each year from:

Supervisor of Federal Aid Planning
Division of Educational Finance
The State Education Department
Albany, New York 12224

State Funds

Educational Technology in the Schools

Modern society employs technology in all of its important activities. In education, technology consists of the application of instructional media to the educational process. These media include instructional film, filmstrips, tape recordings, language laboratories, and television among others. Research has shown that each of these may be used effectively to increase student learning. Educators are responsible for using these media in the best possible way to improve the effectiveness of instruction and increase its efficiency in meeting the needs of education.

In 1968 the Commissioner and the Board of Regents requested funds for the promotion of technology in education, and the Legislature appropriated $75,000 for this purpose. In separate appropriations the Legislature provided funds for the promotion of television. With this modest beginning the Division of Educational Communications plans to initiate demonstration projects which will provide guidance to school districts of the State in the development of technological programs. Since the funds available for this purpose are limited, criteria are listed which will maximize the impact of available funds. Projects that might more appropriately be funded under other Federal or State programs will be given lower priority. These funds are not available for television projects eligible for funding under the State's Local Assistance program. Priority will be given to those projects for which plans are made for their continuance after the State funding period of 1 year. Projects having implications for statewide application will be favored. A written annual report is required as well as an audiovisual report to enable the Division of Educational Communications to promote these projects throughout the State.

Local school districts wishing to obtain funds for educational technology projects are required to match State funds. Projects of less than $2,000 or greater than $10,000 of State funds will not be approved for this first year. Equipment purchased with State Funds shall revert to the State if the project is discontinued. A report of the use of this equipment is required for a maximum period of 5 years.

Time Table

1. Proposal submission June 14, 1968
2. Proposal selection June 14–28, 1968

3. Contract award June 28, 1968
4. Commitment of funds before March 1, 1969
5. Final payment September 2, 1969
6. Final report before August 1, 1969

CRITERIA FOR THE EVALUATION OF PROJECTS

The following criteria, used in the evaluation of applications for educational technology projects, should serve as guides for all school districts and boards of cooperative educational services preparing proposals.

Significance

1. Does the educational technology project represent a significant application of technology to the education process?
2. Does the proposed project go beyond what would normally develop in an educational communications program?
3. Is the project appropriate for other school systems in the State?
4. Will the project make a substantial contribution to the field of educational technology?
5. Is there reasonable expectation that the project is demonstrational rather than experimental?

Information and instructions for application for the State Educational Technology grants are obtainable from:

Bureau of Classroom Communications
The State Education Department
Albany, New York 12224

State Funds

Educational Television in the Schools

The encouragement of educational television in the public schools has long been a policy of the State Education Department. In 1961 this policy was given concrete expression with the amendment of the Education Law to permit the payment of State aid to school districts and boards of cooperative educational services contemplating the use of television in their schools.

School districts and boards of cooperative educational services wishing to receive aid for educational television programs are invited to submit applications in accordance with the instructions in this paper.

The Department has consulting services available to school districts and boards of cooperative educational services in both engineering and television techniques. You may request use of these services in connection with the preparation of your application or later in refining your plans.

As they are received, applications will be screened and classified by a Departmental Committee. At the close of the application period, they will be ranked according to "educational merit and value." The evaluation criteria are detailed in Section II. It is essential that applications be completed no later than May 15 of each year. The eligibility of a school district will be determined by its position on the ranked list. The law provides that State aid payments shall be made according to this list to the extent that funds are available.

School districts and boards of cooperative educational services are encouraged to pursue worthwhile projects whether or not State fiscal aid is available.

Any district or board shall be entitled to an apportionment during the 5-year period following the approval of the program as follows:

Fifty percent of the approved cost relative to the acquisition and installation of the equipment; and during the first year 50 percent of the approved operational expenses in connection with the approved operation of the program can be funded. During the second year 40 percent of the approved operational expenses in connection with the approved operation of the program can be funded. This drops to 30 percent for the third year, 20 percent for the fourth year and 10 percent for the fifth year.

State aid payments will be in two installments. Approximately 50 percent of the State's share of anticipated expenditures are to be paid early in the school year, the balance to be paid at the end of the year after reports are received on the actual expenditures and on the evaluation of the work. Each district receiving State aid for an educational television program in 1967-68 will be responsible for making these reports no later than August 1, 1968. State aid grants for inschool use of television will be made on an annual basis for a single year, but the initial application must show projected plans for a 5-year period.

A school district or board of cooperative educational services may receive support for only one program during the 5-year period. The program during this period may not be amended so as to materially increase the State's aid to a district or board. As a project gets underway items of the budget, with the approval of the Department, may be reallocated if it will prove advantageous to the project and will not materially affect the State's aid to the district or board. While the law provides for continuing aid for 5 years a district or board of cooperative educational services must apply for continuation support each year. Such an application must contain an interim report on the work that has been completed. Requests for continuation are to be filed by May 1. Payment of aid in 1 year neither guarantees nor prejudices the continuation of aid in subsequent years.

From time to time, the State Education Department may plan to release a brief description of television programs supported by State funds. The publication of results, however, is the privilege of the school district. The Department expects that all publications based on State-aided projects shall include an appropriate reference to the support given. This may be done in a footnote to the title stating that "The work upon which this report is based was supported jointly by the (name of school district) and the New York State Education Department under Section 213, Subdivision 4 of the State Education Law." At least 10 copies of such publications shall be furnished to the Department without charge.

Information and instructions for applications may be ordered from:

Supervisor of Educational Television
Local Assistance for School Television Programs
The State Education Department
Albany, New York 12224

Programs of Experimentation and Innovation in Education

State aid for experimental programs was established in 1958. Since that time the number of programs and districts involved has grown as also has the amount available in dollars. The funds to operate this program are provided for in the Executive Budget and may change from year to year.

Description of Program

Experimental Programs: Support is available for experimental programs in science, mathematics, English, foreign languages, social studies, the education of the gifted, the education of the disadvantaged, and the substantive fields. Other areas may be included at the Commissioner's discretion. The primary thrust of these programs is to experiment, within a tight research design and theoretical framework, with new and unproven or previously unevaluated approaches which ultimately may lead to the improvement of instruction.

Innovative Programs: Support is available for the implementation of new and innovative programs which will affect directly or indirectly the instructional program or related services. The primary thrust of these programs is with the *implementation* of previously proven or evaluated activities which have shown positive impact on the total or part of the instructional and related administrative programs.

The experimental programs began with competition by individual districts for grants. Experience has proved the wisdom of encouraging good ideas wherever they arise and also of designing multidistrict programs. Both patterns exist side by side. The new innovative aspect is intended to operate similarly. Whenever a number of school districts (including cooperative boards) have proposals affecting the same or related educational topics, the Department will work to bring them together. In addition the Department, will, on occasion, seek out districts to engage in significant studies or demonstrations of crucial curricula, techniques, or services. Nonetheless, it is expected that individual districts will submit independent proposals for new ideas arising from individuals in school districts.

Procedures in Applying

Applications for State aid for a school year will be considered for any of these programs up to *May 15* of the previous year. The recommended filing date is *April 15. Earlier submission of an application is advisable* and encouraged in order to permit adequate evaluation and negotiation of changes in the proposal when warranted. Applications will be accepted at any time. Members of the State Education Department may be consulted on any matters relating to program or proposal preparation. It has been the experience of the Department that such prior consultation has proved highly beneficial to all concerned.

Limited funds are available for the employment of consultants to assist individual districts or cooperative boards in the preparation of experimental, operational, and planning *applications*. Consultants will be employed and paid by the State Education Department for this purpose. Those districts or cooperative boards wishing to receive help in the development of a new proposal must submit to the Associate Commissioner for Research and Evaluation a written request giving a brief description of the anticipated project and the name and qualifications of the person(s) to be retained as consultant(s). The ongoing services of a project consultant, including the preparation of requests for continuation of State support, should be provided for within the budget of the proposed experimental, operational, or planning program.

For information on the financial provisions and application procedures for programs of experimentation and innovation in education write to:

Associate Commissioner for Research and Evaluation
The State Education Department
Albany, New York 12224

LOCALLY-ORIGINATED INSERVICE (LOIS) PROGRAMS

State funds are available for locally-originated inservice programs. Proposals are being solicited for projects which will acquaint teachers with new developments, trends, and materials in areas critical to their instruction or related activities. Funds for this program are provided annually in the State Budget. For information and instructions on submitting proposals write to The Bureau of Inservice Education, New York State Education Department, 800 North Pearl Street, Albany, New York 12204.

Guides for the Development of Locally Originated Inservice Project Proposals

The following are guides for school districts preparing inservice education proposals for State support. Plans which deviate substantially from these guides should be discussed with the Bureau of Inservice Education before final proposals are submitted.

1. Projects should acquaint teachers with new developments, trends, and materials in areas critical to their classroom teaching or in areas allied to their field of responsibility. The development of curricula is a responsibility of State Education Department specialists and local school district; inservice education proposals which are primarily for the preparation of such curricula are not usually supported.

2. Programs should be carried out at times when the learning potential of teachers is at a high point. Released time during school hours is preferred to late afternoon or evening sessions. Summer, weekend, or vacation workshops are also approvable.
3. It is expected that the school districts will assume at least 50 percent of the cost. Courses are generally from 20 to 60 instructional hours in length. Consultants or instructors are ordinarily paid $20 to $50 per day for their services. If extensive travel is involved, this rate may be increased.
4. Proposals must include a plan for the critical evaluation of the inservice activity and must be sent to the Bureau of Inservice Education upon completion of the program. The report should follow the form published by the Bureau of Inservice Education.
5. Projects, once approved for support, should not deviate substantially from the proposal. Changes should be cleared with the Bureau of Inservice Education *before* they are instituted.

Additional considerations are as follows:

1. The state will assume 50 percent of the cost for programs.
2. There is no maximum placed upon the funds requested, programs requesting state funds under $5,000 will stand the best chance for support. Proposals are submitted by February (Check the instructions each year for dates). A short description of the program you intend to propose should be forwarded to your superintendent as soon as possible.

Recommended Structure of Locally-Originated Inservice Project Proposals

Section A: Title page of Proposal

Date of Proposal

Name of School or School District(s)
  Project Title
  Subject Area
Dates, Time, and Place of Proposed Project
Number and Responsibilities of Participants
  Cost of Proposal
Amount of State Assistance Requested
Name, School Address, Phone Number of Coordinator
Names of Instructors or Consultants
Signature and Title of Chief School Officer

Section B: Project Description

1. Reason for proposing specific project
2. Type(s) of teachers eligible for participation including subject and grade level and criteria for admission
3. Project objectives (general and specific)
4. Plans and methods for a critical evaluation of the program in light of the objectives. A report is to be submitted to the Bureau of Inservice Education upon completion
5. Detailed outline of activities to be carried on in each class session
6. Instructors or consultants presenting the "course" including qualifications giving both educational and instructional experience
7. Location of activities and facilities available
8. Schedule of meeting dates and times
9. Special arrangements such as released time, inservice salary credit, etc.

Section C: Statement of Cost

1. Total Cost of Project
   a. Consultant or instructional fees *specifically enumerated* by *individuals.* Include the amount per session and the number of sessions each person is to work
   b. Other costs by specific items
2. Amount of School District contribution
3. Amount of State financial aid requested. (It is expected that school districts will assume at least 50 percent of the costs)
4. Signature of chief school officer with title

STATE SPONSORED INSERVICE TRAINING OF TEACHERS

A number of programs for the inservice training of teachers are sponsored yearly by the State Education Department. Each program is designed to assist in the better preparation of the teachers of the State. However, *final sponsorship is dependent on the appropriation of funds by the Legislature,* and such information is available at sponsoring colleges by about April 15.

ADMISSION PROCEDURES

Application forms for admission and for grants must be obtained from the officer designated at the college and university approved by the State Education Department. Admission requirements are determined by those institutions, and all decisions on admission will be made by them.

Within the quota assigned to each institution, an eligible teacher admitted to an approved program is assured of a grant. Grants cover tuition and fee charges and in some instances include supplementary subsistence or commutation allowances. The first grant in any collegiate program will cover the full charges for tuition and fees.

ELIGIBILITY REQUIREMENTS THAT APPLY TO ALL COLLEGIATE PROGRAMS

1. Applicants must be recommended by their superintendent or school administrative officer authorized to act on behalf of the superintendent
2. Applicants must be accepted by the college or university of their choice offering Department sponsored courses
3. Teachers in public, private, and parochial New York State schools are eligible to participate in the programs
4. A person can receive only one grant during any one semester

COMMUNICATIONS WITH THE STATE EDUCATION DEPARTMENT concerning these programs should be addressed to:

Inservice Education Unit
Bureau of Teacher Education
The State Education Department
Albany, New York 12224
518: 474-6440

Chapter VI

DEFINITIONS AND STANDARDS

EDUCATIONAL COMMUNICATIONS

Educational Communications is that branch of educational theory and practice concerned primarily with the design and use of messages which control the learning process.

> It undertakes (a) the study of the unique and relative strengths and weaknesses of both pictorial and nonrepresentation messages which may be employed in the learning process for any purpose; and (b) the structuring and systematizing of messages by men and instruments in an educational environment. These undertakings include the planning, production, selection, management, and utilization of both components and entire instructional systems.
>
> Its practical goal is the efficient utilization of every method and medium of communications which can contribute to the development of the learner's full potential.*

Learning theory and communication theory offer the basic concepts for a definition of the educational communications field. The message indicates the information to be transmitted—the body of knowledge and its related skills and understandings. Technology and equipment applies to the way the message is transmitted to the learner.

Definition of Terms *

In every specialized field it is necessary to use and understand a wide variety of terms in describing the purposes and functions of educational communications in our schools. The understanding and recognition of terms and their definitions will provide the readers with a common foundation of understanding and should permit us to communicate clearer and more precise information.

Audioactive. Electronic circuits which permit a student while speaking to hear his own amplified voice in his headphones.

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* "The changing role of audiovisual process in education: A definition and glossary of related terms." Audio Visual Communications Review, pp. 18-19, 11:1 Jan.-Feb. 1963.

Audiopassive. Listening practice in which no response is made by the student or the response is not utilized.

Audiovisual. Educational process concerned primarily with utilizing audio and/or visual media for communication.

Audiovisual Center. A space within a school concerned primarily with utilization, distribution and production of instructional materials employing audio and visual means of communication. Ordinarily is not concerned with television, programed instruction, message design or books and publications.

Audiovisual Communications. Interchange of information and messages by means of instructional materials utilizing primarily audio and/or visual media of communication.

Audiovisual Materials. Tangible objects on which an audio and/or visual message has been inscribed and from which the message may be retrieved for use in teaching and learning. Ordinarily would not include broadcast programs or printed materials.

Classroom Communicator. Electrical and mechanical facilities in a learning space designed to improve communications between student and teacher individually or as a group. Recording facilities and response analysis equipment are often included.

Closed-Circuit Television. Television distributed over cables that does not permit reception by the general public.

Communications. Broad field involving interchange of information and messages, applies to electronics and linguistics in addition to education. Incorrectly used as a term for educational communications.

Communications Process. Steps in the conveyance of information in which consideration is given to the content and form of the message, characteristics of the sender and receiver, characteristics of the medium and associated equipment and the materials that contain the message.

Correlated Instructional Materials. Instructional materials designated for use with specific curriculum topics.

Director of Educational Communications. Administrative school official who organizes, administers and evaluates a program of educational communications within a school district, large school or advanced edcom program within a school.

Dry Carrel. An individual student study space without electrical intercommunication means.

Educational Communications (Edcom) (EC). That branch of human endeavor concerned with the mental and moral development of the individual utilizing the communications process as a basis for learning. Normally is concerned with instructional materials and equipment, communications media and message design.

Educational Communications Center (Edcom Center). A location in a school or school district from which educational communications materials, equipment and services are made available.

Educational Communications Coordinator. Administrator or teacher who adjusts and promotes the use of educational communications materials, equipment and services in a school (building coordinator) or school district (district coordinator).

Educational Communications (Edcom) Equipment. Electrical, mechanical and optical machinery employed in the use of edcom materials for transmission of edcom messages.

Educational Communications (Edcom) Materials. Tangible objects containing a retrievable message used in transmission of information. Not applicable to live broadcasts.

Educational Communications Operations Research. Study and analysis of all factors (educational, psychological, technological, sociological, economic, etc.) involved in the utilization of educational communications in providing learning.

Educational Communications (Edcom) Programs. Live broadcasts of organized messages designed to promote mental and moral development of the individual.

Educational Films. Motion picture films designed to transmit information useful for mental or moral development.

Educational Materials. Tangible objects on which a message has been inscribed and from which a person may retrieve the message.

Educational Medium. The channel through which educational messages may be transmitted; e.g., television, radio, motion pictures, printed matter.

Educational Systems Design. Organization of instructional materials into a unified presentation designed to accomplish carefully specified objectives in an efficient and effective manner. Usually involves an analysis of the system and its components in terms of effectiveness, acceptance, economics and available materials and equipment.

Educational Technology. Application of the industrial arts to education. Specifically relates to projection equipment sound recorders and reproducers to assist in instruction. May incidentally be concerned with technical processes involved in providing instruction.

Educational Television. Television having as its objective general education. Includes instructional television.

Electronic Carrel. An individual student study space with electrical facilities for use of electrical intercommunications means.

Electronic Classrooms. Learning space incorporating electronic equipment to facilitate group or individual student learning.

Electronic Learning Laboratory. Similar to an electronic classroom. Utilizes equipment suitable for many types of learning situations including language instruction, dictation, music, and speech.

Feedback. A method of returning output signals of a communication system to the input. In an audio system this may result in an annoying sound. In an information system the output may be compared with the input to determine the fidelity of transmission or the accuracy and extent of modification of the information transmitted.

Graphic Center. Space devoted to the design, preparation, and duplication of graphic materials.

Graphics. Organization and presentation of messages and information by means of the pictorial arts of drawing, and painting or by means of graphs, diagrams or pictures. Also includes duplication of graphic materials.

Instructional Films. Motion picture films designed for school use or for specific instructional objectives. Includes both 8mm. and 16mm. materials.

Instructional Materials. Tangible objects which serve as a source of information and from which a message may be retrieved for use in teaching or learning.

Instructional Materials Center. A location in a school building where instructional materials and equipment are made readily available for student use.

Instructional Materials Package (KIT). Instructional materials, selected and coordinated to provide assistance in the teaching or learning of a specific instructional topic.

Instructional System. Carefully planned and organized instructional sequence incorporating numerous types of instructional materials and associated equipment to accomplish specific instructional objectives.

Instructional Systems Analysis. Study of the interaction of components (content, equipment, materials, procedures) involved in an instructional system.

Instructional Television. Television having as its objective the provision of instruction in a school or to a designated audience.

Language Laboratory. Learning space incorporating mechanical and electronic facilities for the teaching and learning of languages—

usually tape recorders, earphones and intercommunication facilities with the teacher.

Learning Resources. Instructional materials capable of being used by the student.

Library. Location in a school designed for the collection, organization and distribution of books, manuscripts and photographic reproductions. May include audiovisual materials and equipment.

Mass (Media of) Communication. Means of communicating information to a large number of people. Normally radio, television, and motion pictures but also books and magazines.

Media. Channels of communication. Incorrectly used to denote instructional materials.

Media Center. Location in which several communication channels are brought together and redirected to appropriate use locations.

Moist Carrels. An individual student study space supplied with electrical power for use with portable educational communications materials and equipment.

Multimedia (Cross Media) Presentation (Approach). The use of several types of media (e.g., tapes, television and films) organized and coordinated to more efficiently communicate a message.

New Educational Media. Poorly discriminating term referring to educational communications materials, equipment and methods not in common use in less advanced schools. (Used in National Defense Education Act.)

Open-Circuit Television. Broadcast television.

Pretested Materials. Instructional materials that have been tested and revised before release to produce maximum learning.

Program

(1) An instructional material (improved by successive testing and revision) in which segments of information are presented, and the student is tested before proceeding to new segments of information.

(2) Schedule of instructional materials to accompany an instructional sequence.

(3) Television lesson.

Programmed Materials. Instructional materials in which the content has been carefully organized into discrete units involving statements and questions to indicate comprehension of the content. Normally tested and revised prior to issuance. Often in book form but may appear in machines, on film, computer tape or audio tape.

Public Television. Television having as its objective the provision of instruction in a school or to a designated audience.

Self Instructional (Auto Instructional) Materials. Those instructional materials used by the individual student which permit him to proceed at his own rate of learning.

Teaching Aids. Instructional materials of assistance to the teacher in instruction.

Teaching Machines. Mechanical or electrical equipment for use by an individual in learning from programed materials.

Video. Television visual signal. Incorrectly used to describe the visual channel of communication.

Visual Aids. An outmoded expression for educational communications materials because materials often include content presented in forms other than visual. Although instructional materials may be of assistance to the teacher it is desirable that they be used primarily for an essential instructional purpose.

Visual Materials. Instructional materials that communicate information by means of visual symbols including captions.

Visuals. Materials that may be seen.

Quantitative Standards for Audiovisual Personnel, Equipment and Materials

Administrators of educational communications programs have long recognized that the lack of nationally established standards has been a major deterrent to an adequate supply of properly utilized materials and equipment. Numerous studies have been undertaken to determine guidelines or standards for a program in educational communications. The most recent, most complete, and most appropriate have been done by Gene Faris and Mendel Sherman, under the auspices of the United States Office of Education National Defense Education Act, Title VII research contract. They were adopted by the Department of Audio Visual Instruction (NEA) on October 30, 1965 and by the Division of Educational Communications of the New York State Education Department on August 18, 1966. The approved guidelines provide the basis for the recommendations given for setting up a program in educational communications. Four main categories are included in the standards; personnel, materials, equipment and budget.

Copies of the Quantitative Audiovisual Standards are available from The Division of Educational Communications, The State Education Department, Albany, N.Y. 12224.

Many factors are involved in determining standards in any field. Because of the rapid changes in curriculum, building design and technology, any set of standards must be reviewed, reevaluated and rewritten from time to time. To implement standards at any level four steps should be considered:

- An inventory of all existing materials and equipment
- Establishment of goals
- Developmental plan for obtaining goals
- An evaluation of progress and readjustment of plans for continued growth

Standards for equipment, materials and personnel are given for two levels of development of the educational communications program—basic and advanced.

The basic specifications represent quantities needed to provide for an adequately functioning program in a school. Many schools are well beyond the basic stage, however, with some exceeding the advanced stage in their determination to achieve excellence. It is anticipated that some schools, especially those experimenting with new approaches, may well exceed the advanced stage in some categories and perhaps fall behind in others. While such flexibility is desirable, it is important to have a balanced program where materials, equipment and personnel each make their unique and integrated contribution to the instructional program.

Personnel Guidelines
(Elementary and Secondary Education)

In schools with 15 teachers or less—half-time edcom specialist (specialists may serve more than 1 school).

In schools with 16 to 30 teachers—1 full time edcom specialist.

Add one edcom specialist for each additional 40 teachers or major fraction thereof.

One, or the equivalent, semiprofessional assistant (technician, graphic artist, clerk, photographer, etc.) for each 30 teachers.

Every multiple unit school district with at least one high school and four elementary schools shall employ a district or system edcom director.

Materials Guidelines

(Elementary and Secondary)

16mm. films

The films are to be owned by the school system, unit, district, cooperative, etc., and readily available to the schools involved.

BASIC	ADVANCED
500 titles plus one additional film per each teaching station over 500—with duplicates as needed	1000 titles plus one additional film per each teaching station over 1000—with duplicates as needed
or	or
An average of 6 film rental bookings per teaching station per school year	An average of 12 film rental bookings per teaching station per school year
Filmstrips	
1 per student per ADA the preceding year	1½ per student per ADA the preceding year
Recordings—Tape and Discs exclusive of language lab materials	
100 plus 2 per teaching station	300 plus 3 per teaching station

Due to the state of the field and the nature of certain media it is extremely difficult, if not impossible, to develop quantitative guidelines for all types of audiovisual materials. The list below includes some of these materials. Even though quantitative guidelines are not recommended at this time for these materials, it must be recognized that they do make a unique contribution to the instructional program and must be made available for instructors' use. Each item listed must be supported with a fair share of the funds expended for media. The overall objective of the media program should be to provide a wide variety of audiovisual materials with no one item dominating the program.

8mm. Films
2x2 Slides
3¼x4 Slides
Transparencies and Transparency Masters
Study Prints
Maps
Globes
Dioramas

Materials Budget

To provide for a well-rounded materials program it is recommended that the basic complement of films, filmstrips, and recordings be considered capital equipment and be purchased with such funds. To provide for the ongoing materials program, including maintenance and replacement but not expansion, no less than 1 percent of the average per pupil cost in the school unit should be spent per year per student. The 1 percent amount would include film rentals if no basic film collection is started and subscription television (i.e. MPATI), but would not include salaries, building construction or remodeling, CCTV installations, or electronic learning centers.

To provide for an advanced materials program the 1 percent figure should be increased to 1½ percent.

Equipment Budget

The capital expenditures necessary to secure the equipment recommended herein should be calculated from the price of the equipment. This figure will necessarily vary from school to school due to the range in equipment prices and the excellence of the equipment programs developed.

Equipment Guidelines

(Elementary Education)

	BASIC	ADVANCED
16mm. Sound Projector	1 per 10 teaching stations	1 per 5 teaching stations
8mm. Projector	Should have one available for experimental purposes, but no specific guideline at this time. Schools will have to acquire these as the field develops and materials become available.	
2x2 Slide Projector	1 automatic projector per school	1 automatic projector per 5 teaching stations
Filmstrip or Combination Filmstrip-Slide Projector	1 per 3 teaching stations	1 per teaching station
Sound Filmstrip Projector	Combine available filmstrip projector with existing record player or tape recorder	1 per building
3¼x4 Projector Overhead	1 per school district	1 per school building

3¼x4 Projector Auditorium

1 per auditorium	1 per auditorium

Filmstrip Viewer

1 per 3 teaching stations	1 per teaching station

Also a quantity of viewers (1 per 3 teaching stations) should be available from a central source within the building for special project use or for individual study (school or home).

Overhead Projector (10x10) Classroom type

1 per 4 teaching stations	1 per teaching station

Overhead Projector Auditorium type

Appropriate number for large group instructions. An auditorium model overhead merely implies that the machine utilized has sufficient light output and optical capabilities to project a satisfactory image in an auditorium type situation.

BASIC	ADVANCED
Opaque Projectors	
1 per building	1 per 6 teaching stations
TV Receivers	
1 per class per TV channel at the grade level having the greatest number of sections—if programs are available	1 per teaching station if programs are available
Microprojector	
1 per school	1 per 2 grade levels
Record Players	
1 per teaching station K-3 1 per grade level 4-6	1 per teaching station plus earphones for each—where listening stations are utilized 6-10 earphones needed
1 set of earphones per each teaching station—where listening stations are utilized 6-10 earphones needed	
Tape Recorders	
1 per 5 teaching stations	1 per 2 teaching stations with earphones as needed

Projection Carts

1 per portable piece of equipment purchased at the time the equipment is purchased	Permanent installation for projection purposes in each Classroom

Light Control

Every classroom should have adequate light control. Adequate means the availability of facilities to control light to the extent that all types of projected media can be utilized effectively.

Video-Tape Recorders

Two per school district would be desirable at present time for pilot programs. The state of this field is so dynamic that no specific recommendations can be made.

Closed-Circuit TV

All new construction should include provisions for installation at each teaching station—older buildings should be wired for closed circuit television as need develops.

Radio-Receivers

One per school plus one battery type for emergency purposes	One or more per building as is dictated by instructional needs plus central distribution system (AM-FM)

Projection Screens

One permanently mounted screen per classroom. 70x70 or larger with provision for eliminating keystoning. Large screen for auditorium or large group instructional area.	Additional portable screen of suitable size for individual and small group use

Local Production Equipment Per Building

Dry Mount Press and Tacking Iron
Paper Cutter
Transparency Production Equipment
Spirit Duplicator
Primary Typewriter
Polaroid Camera
35mm. Camera and accessories as needed
Film Rewind
Film Splicer (8–16mm.)
Tape Splicer

8 mm. Camera
Second type of Transparency Maker
Mechanical Lettering
Copy Camera and Stand

Equipment Guidelines
(Secondary Education)

	BASIC	ADVANCED
16mm. Sound Projector	1 per 10 teaching stations	1 per 5 teaching stations
8mm. Projector	1 per building	Number will necessarily have to be based on availability of film cartridges. There is a trend toward individual learning stations or independent study and additional equipment will be needed as program develops.

Significant changes are occurring in the 8mm. medium which do not at present justify quantitative guidelines. Because of the important contribution of these films to individual and small group learning, however, conservative quantities have been suggested. As equipment and materials become more stabilized and as sources expand, schools should increase the quantities beyond the amounts suggested in these guidelines.

	BASIC	ADVANCED
2x2 Slide Projector-Automatic	1 per building	1 per 5 teaching stations
Filmstrip or Combination Filmstrip-Slide Projector	1 per 10 teaching stations	1 per 5 teaching stations
Sound Filmstrip Projector	Combine available filmstrip projector with existing record player or tape recorder	1 per building
3¼x4 Projector (Overhead)	1 per school district	1 per building
3¼x4 Projector (Auditorium)	1 per auditorium	1 per auditorium
Filmstrip Viewer	1 per 3 teaching stations	1 per teaching station

Also a quantity of viewers (1 per 2 teaching stations) should be available from a central source within the building for special project use or for individual study (school or home).

Overhead Projector (10x10) Classroom type

1 per 4 teaching stations	1 per teaching station

Overhead Projector (10x10) Auditorium type

Appropriate number for large group instruction. An auditorium model overhead merely implies that the machine utilized has sufficient light output and optical capabilities to project a satisfactory image in an auditorium type situation.

Opaque Projectors

1 per building	1 per floor

TV Receivers

1 per department where programs are available	1 per 24 viewers in a classroom where programs are available

Micro-Projector

1 per school	1 per department where applicable

Record Players

1 per 10 teaching stations	1 per 5 teaching stations

Tape Recorders

1 per 10 teaching stations	1 per 5 teaching stations

Projection Carts

1 per portable piece of equipment purchased at the time the equipment is purchased	Permanent installation for projection purposes in each classroom

Light Control

Every classroom should have adequate light control. Adequate implies the availability of facilities to control light to the extent that all types of projected media can be utilized effectively.

Video-Tape Recorders

Two per school district would be desirable at present time for pilot programs. The state of this field is so dynamic that no specific recommendations can be made.

Closed-Circuit TV

All new construction should include provisions for installation at each teaching station, and older buildings should be wired for closed-circuit television as needs develop.

Radio-Receivers (AM-FM)

3 per building	1 per 10 teaching stations

1 per building should be battery operated.
1 set all-wave for language use.

Projection Screens

One permanently mounted screen per classroom. No smaller than 70x70 with keystone elimination. Screen for auditorium and/or large group instructional area.	One permanently mounted screen per classroom plus portable screens as needed. Permanent screen no smaller than 70x70 with keystone elimination. Screen for auditorium and/or large group instructional area.

Local Production Equipment Per Building

Dry Mount Press and Tacking Iron
Paper Cutter
Transparency Production Equipment
16mm. Camera
8mm. Camera
Rapid Process Camera
Equipped Darkroom
Spirit Duplicator
Primary Typewriter
Copy Camera and Stand
Light Box

35mm. Still Camera
Film Rewind
Film Splicer (8mm. and 16mm.)
Tape Splicer
Slide Reproducer
Second Type of Transparency Production Equipment
Mechanical Lettering

Chapter VII

ADMINISTERING EDUCATIONAL COMMUNICATIONS MATERIALS

16MM Instructional Film

GUIDELINES FOR INSTRUCTIONAL FILMS

The films are to be owned by the school systems, unit, district, cooperative, etc., and readily available to the schools involved.

Basic	500 titles plus one additional film per each teaching station over 500—with duplicates as needed or An average of 6 film rental bookings per teaching station per school year
Advanced	1000 titles plus one additional film per each teaching station over 1000—with duplicates as needed or An average of 12 film rental bookings per teaching station per school year

Instructional films have long been the media used by teachers in the educational instruction process. Creative teachers are finding new ways and new materials to increase the effectiveness of the instructional film not only in a classroom situation but in working with large groups or with individual students. Research indicates these films are probably the most effective of instructional materials.

Location of the collection

If educational films are to be used as basic resources in the instructional program, then films must be available in all subject areas and so serviced as to permit delivery to the teacher within a reasonable time. Good teaching using educational communications materials and equipment is handicapped when materials are difficult to obtain and are not available at the proper time. The number of films that are required and the recommended service can be solved only in terms of the needs and priorities of the local situation.

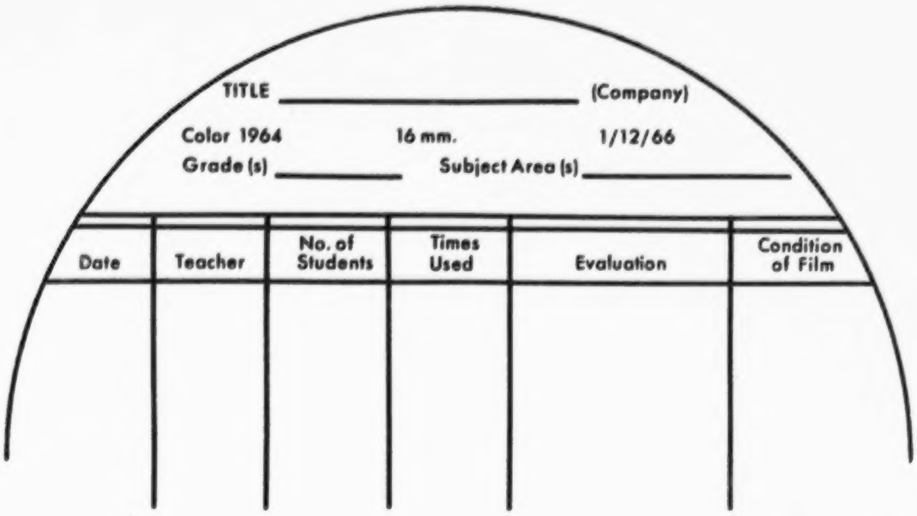
The film libraries most commonly found today are located at district educational communications centers, BOCES, where several school districts combine services, or at colleges or universities where 16 mm. instructional films may be borrowed for a reasonable fee.

Selection

Many variables affect the selection and size of the collection of films in a school district. The cost of the 16 mm. instructional film makes it essential that films be carefully selected and properly utilized in order to justify the investment. Unless there is a high frequency of use the instructional film should be rented rather than purchased. When the rental charges of a film during a year equal from one-fifth to one-seventh of the purchase price of the film, it becomes feasible to purchase.

To insure full utilization, the film must be carefully selected by a committee of teachers and subject-matter specialists. All factors affecting utilization should be considered. The following general recommendations are made:

- Study the curriculum carefully and decide on the areas that can best be covered by the instructional films.
- Locate the best films available by using a collection of film catalogs and reports of professional evaluators. (An index to 16 mm. Educational Films is available from the National Information Center for Educational Media, University of Southern California, Los Angeles, California.)
- Catalog descriptions and study guides will give the selection committee some basic information that will help in the selection of the films to be considered.
- The committee should select or design an evaluation form. They should decide on the criteria they wish to use in order to justify the purchase of the materials.
- Films should be previewed by the director of educational communications and by the teachers involved in the subject matter covered. The director is responsible for the technical quality of the item and the teacher and supervisors should decide on the value of the subject matter content. Whenever possible, films should be evaluated in a classroom situation.
- Evaluation is a continuous process. A careful record of the use and evaluation of content should be maintained even after the purchase is made. A separate index card or evaluation outline may be included with the film or a special form can be designed to fit in the cover of the film can.



TITLE ______________ (Company)

Color 1964 16 mm. 1/12/66

Grade (s) ________ Subject Area (s) ______________

Date	Teacher	No. of Students	Times Used	Evaluation	Condition of Film

Teachers should be encouraged to keep an evaluation record of the films they use for their own information. A short note in a teacher's guide or plan book concerning films used will help in planning for the following year.

- The committee of specialists should be aware of the task of keeping the film collection up to date and in good condition.

Distribution

In order to provide instructional films at a reasonable cost per showing, it is recommended that films be distributed from a district center or a BOCES. The following points should be kept in mind when deciding on how to distribute films to teachers and students:

- A basic collection of at least 500 film titles should be available.
- Teachers should be able to have their requests for materials filled as soon as possible but no longer than 3 weeks.
- Delivery from the center to the different schools should be daily or at least several times a week.
- In school districts having an advanced collection, films are sent to individual schools or to instructional materials centers for short or long-term loan for use by teachers and students who are working on special projects for a designated time.
- Special area films and sponsored films can be rented or borrowed by school districts for the time they are needed. Many topics in the curriculum such as health, conservation, etc., are readily available from governmental agencies and industrial companies.

Labeling

- The most common method of labeling film is to use a number system and assign each film its own numbered space on the shelf.

- Place the title, call number and distribution center identification on the edge of the film can lid.
- Attach a leader at least 5 feet long on which are lettered "start" or "head", the film title, the call number, and identification of the distribution center. (Color leader is available if you wish to code the films as to grade level or subject area.)
- Attach a trailer about 3 feet long and letter "end" or "tail" at the end of the film.

Handling and Storage

Films require special storage facilities. It is important that film materials be kept at normal humidity and temperature, hence a separate room is desirable in which humidifiers may be operated to keep air from getting too dry. Open racks are recommended for the storage of films. Only in extreme situations of excessive humidity is it required to store films in closed cabinets. The storage racks may be purchased in several sizes. The director of educational communications must decide on how the films are to be stored on the shelf before ordering and designing shelving. When the films are stored by size, it is possible to save storage space. When random size storage is used, the height of the shelf must accommodate the largest size reel.

Maintenance and Care

Instructional films must be maintained in first-class condition or their deterioration will be accelerated. Teachers lost interest quickly when the materials they receive from central depositories are shoddy in appearance, when film materials break during the projection, and when materials look dirty.

Tips on Film Care

With normal school use, properly treated film can last about 10 years.

1. Clean films periodically during the year with a good liquid film cleaner. This will not only remove excess grime but will keep the film pliable.
2. Check and repair films carefully after each use. Film users can aid in film care by notifying the center when a film is damaged. Instructions on how to report damage on a standard form should be provided with each film. Caution against mending film with pins or scotch tape.
3. Splicing machines are inexpensive devices and could be provided for schools using a quantity of films. However, they should be used only by experienced persons.

4. Rewind film carefully. Properly wound film is smooth on both sides of the reel, with no protruding ridges. Don't wind too loosely.
5. Provide manuals and diagrams for each projector.
6. The majority of film companies provide professional repair service at minimum cost. Before repairing and replacing films, the company will furnish an estimate of cost. When repair with replacement footage becomes uneconomical, the company will supply a new print for a reduced price upon return of the damaged print.

Supply each film with a card or a mimeograph sheet listing special rules concerning film care and projection precautions.

Film Appraisal Form

Bureau of Audio-Visual Instruction
131 Livingston Street
Brooklyn, N. Y. 11201

Item No. ______________ Code______________Exp.____

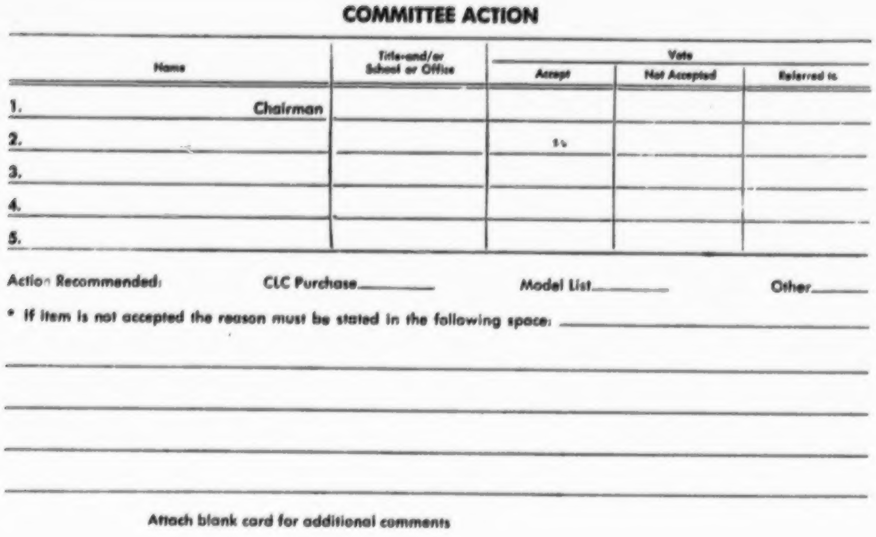
RECOMMENDATIONS: (Chairman sign in one space below) We have examined the item described and recommend that it be accepted for listing and the annotation as amended be used in such listing.

Chairman ______________________________ Date______________________

We recommend that the items not be listed for the reasons listed on the reverse side of this card.

Chairman ______________________________ Date______________________

(Reverse side of form on next page)



COMMITTEE ACTION

Name	Title-and/or School or Office	Vote		
		Accept	Not Accepted	Referred to
1. Chairman				
2.				
3.				
4.				
5.				

Action Recommended: CLC Purchase________ Model List________ Other________

* If item is not accepted the reason must be stated in the following space: ____________________

Attach blank card for additional comments

Rules for Good Film Use

1. room is ventilated
2. check equipment and power
3. clean track and gate before using
4. thread projector—check operation
5. don't leave equipment unattended during the showing
6. return materials and equipment to their proper storage place

Inspection of Films

Films must be inspected after each use in order to prevent more damage. When inspecting by hand operated equipment, the inspector should wear white cotton gloves. Allow the thumb and index finger to ride lightly on the film edges in order to detect broken or damaged sprocket holes.

Use a film notcher to cut jagged film when a single sprocket hole is damaged. When several holes are damaged, it will be necessary to remove a section and splice. Check splices to see that they are holding firmly; replace the ones that have been weakened.

Automatic film inspectors now on the market will do the work required at a high rate of speed. Where there is a large number of films checked daily, it would be advisable to check the cost of this equipment as valuable staff time may be saved as well as providing faster delivery of films to schools.

Types of Film Damage and Remedy

Scratches	Clean projector, handle film carefully. Scratch removal commercially available.
Creases	Handle film carefully. Keep film off floor.
Enlarged Sprocket Holes	Have projector attended to by approved repairman. Check threading of projector.
Torn Sprocket Holes	Have projector attended to by approved repairman. Check threading and operation of projector.
Breaks	Make correct splice.
Holes in Sound Track or on Film	Use appropriate equipment for type of film. Silent projector with dual sprockets will damage film. Make sure film is properly on reel.
Burned Spots	Have projector checked by approved repairman.
Dirt on Film	Clean projector. Clean film. Wipe with soft clean cloth and film cleaning fluid.

Films for Inservice Education

The Division of Educational Communications, The State Education Department, has a collection of motion picture films dealing with the field of educational communications.

The primary purpose of establishing this film library is to aid inservice teacher training programs. These Title III subject matter area films were selected as examples of techniques used in motion pictures to attain instructional objectives. It should be understood by the intended borrower that these films are to be used solely for teacher-inservice instructional situations or public information programs concerning the schools.

There is no charge for borrowing films other than payment for return insured postage. Requests for films must be made on the forms or on a reasonable facsimile of these forms which may be found as the last pages of the catalog.

Copies of the *Cinelib* catalog may be secured from:

Cinelib
Division of Educational Communications
The State Education Department
Albany, New York 12224

Sample Listings From Cinelib Catalog

Catalog Number	Description of Film
136S	*Audiovisual course preview No. 1*—AV-TV Series date 28 min.—si. or sd. Kinescope B&W or color Describes the general nature and content of the AV-TV Series course.
10	*Better Bulletin Boards*—Indiana University—13 min. Presents many kinds of bulletin boards—how they are constructed and how they can be used. Shows boards made of wallboard, cork, metal, screen, ropes and peg boards. Illustrates how to attach pictures and objects through the use of thumbtacks, pins, special wax, and holders. By animation, shows the proper placement.

Film Libraries in New York State

(Sources for Free Film and Rental Libraries)

American Bankers Association
12 E. 36th Street
New York, N. Y. 10016

American Cancer Society, Inc.
219 E. 42nd Street
New York, N. Y. 10017

American Heart Association
44 E. 23rd Street
New York, N. Y. 10010

American Institute of Steel Construction, Inc.
101 Park Avenue
New York, N. Y. 10017

American Museum of Natural History
Central Park West at 79th Street
New York, N. Y. 10024

American Petroleum Institute
1271 Avenue of the Americas
New York, N. Y. 10020

Association Films, Inc.
347 Madison Avenue
New York, N. Y. 10017

Bausch and Lomb Inc.
Film Distribution Service
635 St. Paul Street
Rochester, N. Y. 14602

Bell System Telephone Offices
150 West Street
New York, N. Y. 10007

Educational Communications
Films for Teacher Training
Bureau of Classroom Communications
State Education Department
Albany, N. Y. 12224

Business Education Films
5113 - 16th Avenue
Brooklyn, N. Y. 11204

Consumers Union Film Library
267 W. 25th Street
New York, N. Y. 10001

American Red Cross
150 Amsterdam Ave.
New York, N. Y. 10023

American Stock Exchange
86 Trinity Place
New York, N. Y. 10006

American Telephone and
Telegraph Co.
195 Broadway
New York, N. Y. 10007

Federal Reserve Bank of New
York
33 Liberty Street
New York, N. Y. 10045

Films of the Nations Distributors
305 East 86th Street
New York, N. Y. 10028

Ford Motor Company
16 E. 52nd Street
New York, N. Y. 10022

General Motors Corp.
1775 Broadway
New York, N. Y. 10019

Insurance Information Institute
267 W. 25th Street
New York, N. Y. 10001

Metropolitan Life Insurance Co.
1 Madison Avenue
New York, N. Y. 10010

Museum of Modern Art
11 West 53rd Street
New York, N. Y. 10019

National Association of
Manufacturers
277 Park Avenue
New York, N. Y. 10017

National Dairy Production Corp.
260 Madison Avenue
New York, N. Y. 10016

New York State Department of
Commerce
Film Library
40 Howard Street
Albany, N. Y. 12207

Eastman Kodak Co.
343 State Street
Rochester, N. Y. 14650

Educational Developmental
Laboratories, Inc.
284 East Pulaski Road
Huntington, N. Y. 11744

Radiant Films
220 W. 42nd Street
New York, N. Y. 10036

Shell Oil Company
Film Library
149-07 Northern Boulevard
Flushing, N. Y. 11354

State University Forest Ext.
Syracuse,
New York 13210

State University of New York at
Albany
1223 Western Avenue
Albany, N. Y. 12203

State University of New York at
Buffalo
Communications Center
Buffalo, N. Y. 14214

Sterling Movies, Inc.
43 W. 61st Street
New York, N. Y. 10023

Syracuse University
Educational Film Library
1455 E. Colvin Street
Syracuse, N. Y. 13210

Tea Council Film Library
267 West 25th Street
New York, N. Y. 10016

Texaco Inc.
2100 Hunters Point Avenue
Long Island City, N. Y. 11101

United Nations
Films and Television
Distribution Officer
New York, N. Y. 10017

New York State Department of Health
84 Holland Avenue
Albany, N. Y. 12208

New York State Teachers Association
152 Washington Avenue
Albany, N. Y. 12210

New York University Film Library
26 Washington Place
New York, N. Y. 10003

Post Office Department
8th Avenue and 33rd Street
New York, N. Y. 10001

U. S. Atomic Energy Commission
376 Hudson Street
New York, N. Y. 10014

United World Free Film Service
221 Park Avenue
New York, N. Y. 10003

Wayne County Library System
Mason and High Streets
Newark, New York 14513

Yeshiva University
Amsterdam Ave. and 186th Street
New York, N. Y. 10033

Filmstrips

GUIDELINES (Materials)

(Elementary—Secondary)

Filmstrips—Basic: 1 per student per ADA the preceding year
Advanced: 1½ per student per ADA the preceding year

Location of Collection

For many years the question of centralization vs decentralization has existed concerning filmstrips. Filmstrips are inexpensive and easily handled. The use and availability to teachers should be the determining factor as to the location of the filmstrips. The majority of school districts having a district service center assign filmstrips to more than one location. Filmstrips may be located at the following locations:

1. District Center

It does not make sense to duplicate filmstrip collections in each school if each collection must be severely limited in size. There should be a basic collection covering all subject areas and grade levels in order to have an effective program. In a beginning program a central collection can include a much wider range of materials and can be utilized more efficiently. The center should also serve as a source for expensive sets of filmstrips and filmstrips that cover specialized subject content.

2. School Center

When the district collection of filmstrips is large enough then auxiliary collections can be located in individual schools. It is desirable that filmstrips on many subjects and covering a wide range of interests be readily available in the school for use by class groups, small groups of students and individual students. To meet these needs, it is advantageous for each school to have its own collection of filmstrips..

3. Classroom and IMC

In classrooms where filmstrips are used as an integral part of instruction, filmstrips are assigned to the teacher on a permanent basis or on long term loan. Filmstrips are available in study centers or instructional materials centers for use by individual students. Where materials and equipment are adequate, filmstrips may be loaned for home use in the same manner in which books are handled.

Selection

Filmstrips are selected in the same manner as films or other instructional films. Caution should be taken in selecting filmstrips as all companies do not send preview copies. The center can help in this service by purchasing new filmstrips and then ordering duplicate copies after the teachers have a chance to evaluate them in actual teaching situations.

Filmstrips should be selected which meet the purposes, needs and interests of the instructional program. A filmstrip should be:

- Well-organized
- Interesting
- Factually correct
- Up to date
- Legible, if captioned
- Clear and have sharp pictures or visuals
- Presented in a manner and with content suitable for the age level and experience of the class or student

Distribution

Filmstrips are distributed to the teachers and students in the same manner as instructional films and other instructional materials. When filmstrips series are ordered by the teacher, the length of the loan period should be decided by the teacher. Single filmstrips may be utilized in a day or a week but a series of filmstrips covering a unit of work may be needed by the teacher for several weeks.

Labeling

There are two kinds of information about every filmstrip that are important: 1. The subject area, described in as much detail as possible; and 2. The location where the filmstrip is housed. Both kinds of information can be given by a letter or numbered code marking, or one which is a combination of both.

In processing filmstrips, affix title, call number and name of the distributing center to the cover of each filmstrip. When filmstrips are retained in sets, the title of the set as well as the titles of the individual strips should be listed on the box or container. If there are two or more copies of the same title in the collection, they should each have the same call number. To identify each filmstrip or set, we add copy 1, copy 2, etc.

In listing filmstrips series in the catalog, give the call number, the title, grade level and subject matter covered. When listing filmstrip sets, give the title of set and the titles of the individual filmstrips contained in the series. The number of filmstrips in the collection usually makes it impossible to give a description of each strip.

Handling and Storage

There are several types of filmstrip storage facilities available. The simplest means of storing films is to place them in drawer sets especially made for this purpose. The metal or prefabricated storage units are so designed that they may be stacked as the collection increases. These drawers are fitted with dividers which gives a permanent numbered position for each filmstrip. Homemade boards or slanted shelving with rows of holes large enough for filmstrips may also be used.

Plastic containers with attached lid are available, if the filmstrip does not already come in one. This type of can will eliminate the possibility of misplacing or putting the wrong cover on the filmstrip.

Many district centers handle and distribute filmstrip sets rather than individual titles. The filmstrips are kept in boxes and located on shelves just as you would store books. This system of storage has its advantage in that a teacher's guide can be kept in the same container with the filmstrips.

Maintenance and Care

Filmstrips require little care. While 35 mm. splicers are available this process is not recommended for torn filmstrips. Old and worn-out filmstrips should be discarded. It is sometimes possible to salvage sections of a damaged filmstrip by cutting it into short strips for use by individual teachers who use visuals effectively. Filmstrips can also be cut and mounted as individual slides. The inspection of filmstrips is usually done visually. A quick glance can detect scratches, broken sprocket holes or damaged film. Most filmstrips are treated with a special process which applies a protective coating to the surface of the film that reduces scratching and fading. After inspection, roll strip carefully starting at "The End." Keep fingers off picture surfaces and handle by the edges so that fingerprints and skin acids will not get on the film. Roll the filmstrip into a coil small enough to fit into the container. Jagged corners or torn perforations should be cut off with a film notcher or scissors to prevent further damage. Filmstrips can be cleaned with the same liquid cleaner used for 16 mm. film. Cleaning will remove dirt and keep the film base pliable. (When cleaning filmstrips, care should be taken not to use too much film fluid.)

Unique Characteristics

Filmstrips have the advantage of being very inexpensive, durable, and easy to project in the classroom, in independent study areas and even in the home.

The low cost of production and the great demand for filmstrips have resulted in an excellent supply of materials in all subject areas and at all grade levels. It is also possible for teachers and students to make their own filmstrips.

The availability of previewers and small lightweight projectors have made filmstrips available for a variety of teaching situations. A projector and rear-view screen combination make it possible to use them in a lighted classroom thus making it an ideal tool for individual and small group instruction.

Sound Filmstrips

Equipment Guidelines
(Elementary—Secondary)

Sound Filmstrip Projectors
  Basic—Combine available filmstrip projectors with existing record player or tape recorder.
Advanced—1 per building

Sound filmstrips are standard filmstrips accompanied by sound tape or disk. Sound filmstrips may be used by combining a filmstrip projector with a record player or with an automatic sound-filmstrip projector that changes pictures automatically by means of an inaudible sound signal system on the record.

Location of Correction

Sound filmstrips are located at the district center or at a school center. This item is relatively expensive and is seldom assigned to an individual teacher.

Selection and Distribution

Sound filmstrips are selected and distributed in the same manner as filmstrips. There are hundreds of sound filmstrips available in all areas of the curriculum and at all levels of instruction.

An Audiovisual Source Director of Educational Sound Filmstrips is available from The DuKane Corporation, Audio Visual Division, St. Charles, Ill. 60174.

Labeling

Filmstrip, tape or disk and teacher's guide are usually packaged in combination. The outside package, the filmstrip, the record or tape and the teacher's guide should contain the following information:

- Identification number
- Title
- Subject area(s)
- Grade(s)

Handling and Storage

Filmstrips and accompanying disk are stored in one package. The shelving should be high enough to permit records to be stored on edge.

Maintenance and Care

In preparing the filmstrip-record combination, the record should be packaged between stiff cardboards. When filmstrip-disk combinations are to be distributed, fiber cases similar to those used for 16 mm. film are available for storage and shipment.

Unique Characteristics

Sound filmstrips present the sound in the same manner each time. This is sometimes a disadvantage as the filmstrip cannot be stopped or repeated once it is started. Also, maintaining synchronization between pictures and sound sometimes is quite a problem.

Transparencies

Equipment Guidelines
(Elementary and Secondary)

Overhead Projectors (10x10) Classroom type
        Basic—1 per 4 teaching stations
    Advanced—1 per teaching station
Overhead Projectors, Auditorium type,
    Appropriate number for large group instruction

An auditorium model overhead merely implies that the machine utilized has sufficient light output and optical capabilities to project a satisfactory image in an auditorium type situation.

The overhead projector is considered one of the most valuable and versatile projectors for classroom instruction. It is easy to operate and does not require a darkened classroom. With the advent of the low-cost, lightweight projector, the overhead can be standard equipment for each teaching-station. The overhead presents a new concept that places the emphasis on materials. Its uniqueness lies in the fact that it lends itself to the production of locally produced materials as well as the wealth of commercially prepared transparencies now available to the schools.

Location of Collection

Transparencies are located throughout the school district. The quality and quantity of the collection and the availability of the equipment necessary to make transparencies are the deciding factors in the proper location of the collection.

Transparencies and materials to make slides are stored in the following areas:

A District Center—Prepared transparencies and master copies that are sent to more than one location are located in the center. The materials used to produce transparencies should also be available at the production center.

A Building Center—Duplicate copies of transparencies and master copies are located in the building center. Supplies of acetate, pencils, pens, and other material for producing teacher-made transparencies should be available in each school. When teachers are trained to operate simple production equipment such as the heat-transfer copier and the heatpress, this equipment should be available at the building level. Classroom-Transparencies that need not be shared with other teachers are located in the classroom. Teacher-made materials are usually the property of the teacher.

Selection (Making the Collection)

Printed or commercially prepared transparencies are selected by the teachers, the subject matter supervisors, and the director of educational communications. The director should check on the technical factors such as the visibility, and the amount of information on each transparency as well as the size of lettering. In planning to produce transparencies, the teacher should decide if the subject matter requires visualization: There should be one main concept or idea on a transparency. Use a horizontal format when possible.

Distribution

If a teacher is to use the overhead effectively then the materials and the projector must be available when it is needed. To be properly integrated with classroom instruction the overhead should be as accessible as a piece of chalk. The ultimate goal of a program should be an overhead projector for every classroom.

Materials and transparencies are listed in the catalog and distributed in the same manner as other educational items. Sets of transparencies and master books that are shipped to more than one location should be kept at the district center. Individual transparencies and master copies for production of teacher-made materials using simple equipment should be housed at the building center.

Labeling

In processing sets of transparency, provide on each envelope or box the call number, the name of the distribution center, the title, the number of slides in the set, the subject area and grade level. Each slide in the set should have the call number and title of the set, the title of the individual slide and the code number to indicate its location in the set. Master copies to be used to produce transparencies are processed in the same manner as the transparencies.

Handling and Storage

Transparency sets may be stored vertically in jumbo filing cabinets, or on shelving similar to that regularly used for books. Sets should be carefully packed in heavy manila envelopes, or in cardboard boxes when they are to be distributed to different locations. It is recommended that single transparencies be stored at the building center or by the individual teacher.

Master copies used to make transparencies are stored in packets or in loose leaf notebooks and are labeled and stored in the same manner as the transparencies. Diazzo transparencies are usually stored in light proof envelopes, as exposure to light causes the copy to fade. Insert a sheet of paper between the transparencies to prevent rubbing or sticking.

Maintenance and Care

No special care is required to keep the collections. Old or damaged transparencies should be replaced or discarded.

Unique Characteristics

The projection screen requires a special mounting in order to eliminate the distortion of the visual image called keystoning. The screen should be attached to the wall or ceiling high enough to permit the entire screen to be seen by all the students in the room.

A 70x70 inch screen is recommended for a standard size classroom. Larger areas would need proportionately larger screens.

A Source Directory of prepared transparencies may be ordered from Stickley-Silver, Inc. 59 Carroll Street, Binghamton, N. Y. 13901. $1.00

Audio Tapes

Equipment Guidelines

(Elementary)

Tape Recorders—Basic
1 per 5 teaching stations
Advanced
1 per 2 teaching stations with earphones as needed
(Secondary)
1 per 10 teaching stations
1 per 5 teaching stations

The tape recorder is rapidly increasing in use as a means of providing materials for instruction. Its potential is very great. The tape recorder not only has many uses in the classroom as a recorder but it is designed to help the resourceful teacher in classroom teaching from keeping a recorded record of a student's progress to teaching a class. Growing changes in the curriculum point toward its greater use in providing instruction to individual students. The tape recorder has a contribution to make that is unique among the instructional media.

Location of Collection and Distribution

In the past few years, tape recordings have found an important place in nearly every school. As yet no guidelines are established concerning the number of tapes recommended for a good program. The number of recorded tape programs and the supply of blank tapes necessary for adequate production depend on the teaching techniques used and the quantity and quality of the equipment available.

The majority of high schools now use the electronic classroom for modern language instruction. This type of instruction demands an adequate supply of both audio and visual materials. Individual tape recorders or listening tables are being used in many special areas such as speech development and reading development programs. The taped lesson is ideal for use in independent study areas and as part of the multimedia approach to instruction.

It is recommended that master tapes be stored and distributed from the district center. The center should have facilities for duplicating tapes and be capable of supplying programs requested by the individual schools. Additional copies of programs, depending upon the demand, should be located in the individual schools in special study areas, such as instructional materials centers and learning laboratories. A supply of blank tapes should be available to all teachers and students for individual lessons.

Selection

Do not invest in cheap tape. The quality tapes give better frequency response, less background noise, less head wear on the recorder, and stand up well under usage and storage. (Recording tape is available to schools on State Contract.) Prerecorded tapes should be selected for their quality and content. Does the recorded material serve the educational needs of the teachers and students?

In addition to the taped programs prepared by the teachers and students of the school district a large number of prerecorded materials are available for purchase.

- Book companies are now publishing teaching tapes to correlate with book programs.
- Several school districts are willing to participate in an exchange program of taped lessons.

- Duplicate programs are available from the State Education Department, Albany, New York.

Tapes for Teaching

TAPES FOR TEACHING is a tape duplicating service of the Division of Educational Communications. More than seven thousand titles are listed in the catalog. Almost all curricular areas are covered and every title currently available from the National Tape Repository is included in the collection. Supplements and updated catalogs will be published as required.

The values and unique contributions of educational tapes have long been neglected. The purpose of the Tapes for Teaching service is to assist educators in the development of programs which make efficient use of audio-tape materials. Audio-tapes, when carefully selected and properly utilized are excellent teaching tools and are comparatively inexpensive.

Sample Listing of Tapes in Catalog

AUDIOVISUAL EDUCATION (c-a) NBI

This series deals with the audiovisual materials available to teachers and the unlimited possibilities of audiovisual media in education in the future.

Archives and History Communication Act (NEA)—61 Min.
Audiovisual Movement (NEA)—20 Min.
Early Classroom Visual Instruction (NEA)—41 Min.
Early Visual Education in Canada (NEA)—15 Min.
New Horizons in A-V Education (IND)—60 Min.
Radio In the Classroom (KOAC)—30 Min.

A copy of the catalog may be obtained from:

The University of the State of New York
The State Education Department
Division of Educational Communications
Albany, New York 12224

Labeling

Be sure to:

1. Label the tape box. (The box usually provides a space for the title on the cover and on the edge of box.)
2. Label the reel in case the box is misplaced. You can use special labels or print on the reel itself with waterproof felt-tip pen.

3. Label the tape. A leader tape should be spliced to the tape. It can be written with pencil, pen or ballpoint.
4. The box, the reel, and the tape leader should have the following information on them:
   a. The title of the program
   b. The number of the lesson if the tape is one of a series
   c. The length of the recording
   d. The speed at which it is recorded
   e. A code number for filing

Handling and Storage

Magnetic tapes can be affected by abnormal temperature and humidity. Low humidity will dry out acetate tapes and make them brittle. High temperature will cause physical distortion and loss of strength. Polyester backings (Mylar-Tenzar) are relatively unaffected by humidity. Humidity should be between 40 and 60 percent and the temperature between 70° to 75°F. A magnetic tape exposed to extreme conditions for short periods is not permanently affected. Storage under normal conditions from 16 to 24 hours will completely restore desired properties.

1. Store in boxes. Avoid storing unboxed reels of tape.
2. Store on edge on individual shelves or in a file drawer. Avoid stacking as the weight may distort the plastic reels.
3. Avoid extremes of temperatures. If tape is delivered to schools during extreme cold or hot weather, allow 4 to 8 hours for it to return to room temperature before using.
4. Occasional use of the tape improves storage characteristics. Playing the tape on a machine releases strains and adhesions.
5. If tape has been stored for 6 months or longer, it is a good idea to rewind it once before using.
6. Avoid excess tension in rewinding tape for storage. One of the major causes of tape distortion is excessive tension in winding.

Maintenance and Care

An occasional cleaning of recording head, capstan, tape guides, and other parts of your recorder will prolong the life of your tapes. See your recorder operating manual for information on cleaning solvents and procedures.

The following items should be considered:

1. Check drive and rewind belts and rubber-rimmed wheels for tension and wear.
2. The squealing of pressure pads on tape can be stopped by cautiously roughing up the matted-down surface of the pads that press tape against recording and play heads.

3. Magnetic heads need to be wiped free of accumulated iron oxide.
4. A test tape from Audio Devices, Inc. is available to check the magnetic heads for proper alignment.
5. Tape recorders need to be protected from dirt and dust at all times. One should frequently remove the accumulation of dirt around rollers and capstans.
6. After using equipment, operators should be trained to remove power cord from outlet, to return all parts of the recorder to their proper storage place and to follow directions for returning both materials and equipment.

Care of Tape

Recording tape will remain magnetized forever unless altered by magnetic means. There is no measurable loss of magnetism over a period of time. No matter how often played, the noise level of a tape does not rise as does the surface noise of a disc recording. Magnetic tape is tough and is easy to handle, but it can be damaged and does deserve a certain amount of care.

To cause erasure, a magnetic field must be strong enough to exert a noticeable attraction or induce vibration in the tape. It is unlikely that such erasure could happen accidentally. However, tapes left in the path of a strong magnetic field could become erased. For this reason, tape should never be placed near workshop equipment nor near strong permanent magnets (such as magnetic door latches) and electromagnets.

Unique Characteristics

Recorded tapes can be played as many times as desired. When the recorded program is no longer useful, the tape can be erased and used for a new program. The original tape should be thoroughly erased before recording the new lesson. There are bulk erasers available on the market.

Editing Programs or Splicing the Tape

Occasionally the teacher or the students will want to edit some of the programs produced. Changes in a program may be made in two ways. The first technique is to record over the section that you want changed. If nothing is to take the place of the section that you want eliminated, then the tape can be cut and spliced.

Splicing is an easy matter. Overlap the two ends of the tape and cut at a 60° angle. The ends are then aligned with the shiny or uncoated side up. Cover the cut crosswise with splicing tape. The excess splicing tape is trimmed at the edges, cutting into the recording tape very slightly to eliminate any stickiness at the edge.

Recording Time for Various Tape Speeds and Reel Sizes

Reel Size in inches	3	5	7
Length in Feet	150	600	1200
Recording Speed Single Track			
1⅞" per sec.	15 min.+	1 hr.+	2 hr.+
3¾" per sec.	8 min.	30 min.	1 hr.
7½" per sec.	4 min.	15 min.	30 min.

Recordings

EQUIPMENT GUIDELINES

(Elementary)

Record Players

Basic

1 per teaching station K-3
1 per grade level 4-6
1 set of earphones per each teaching station, where listening stations are utilized, 6-10 earphones needed

Advanced

1 per teaching station plus earphones for each—where listening stations are utilized 6-10 earphones needed

(Secondary)

Basic
1 per 10 teaching stations
Advanced
1 per 5 teaching stations

MATERIALS GUIDELINES

(Elementary—Secondary)

Recordings (Exclusive of language laboratory materials)

Basic
100 plus 2 per teaching station

Advanced
300 plus 3 per teaching station

Location of Collection and Distribution

Local factors should determine the location of the record collection. Records are inexpensive and it might be cheaper to provide duplication of titles for each school building than to store and distribute them from a district center. The number of records in the basic collection, the record players available, and the use of recorded materials in instruction are the deciding factors that determine where records should be housed.

It is recommended that records should be located in several places throughout the school district.

A Central Collection—The center should store and house expensive record albums and records that cover special areas of the curriculum. A district center can also provide a valuable service by introducing and distributing new materials as they become available to the schools.

A Building Collection—A basic collection of records for use in all grades and in all areas should be located in the building center. Duplicate copies can be provided for individual teachers when required. Because of the low cost of records and the number of record players available, it is good practice to provide recorded materials to students for home study. The collection should be located where the mechanics of borrowing materials can be handled and supervised.

A Classroom Collection—Primary classrooms require a basic collection of records available at all times. Special areas of the curriculum, such as speech and language classes, need and should have a separate classroom collection of records. Materials that can be shared should be housed in the building center or school library where it is available to teachers at all times.

Selection (Making the collection)

Recordings are selected in the same manner as other materials. Established procedures for the evaluation and selections of records should be followed. The evaluation form used by school districts may differ from location to location but basically they cover the same points that should be considered before purchasing any item to be used for instruction.

Labeling—Processing Disk Recordings

- Assign a call number to each album or record.
- Write the call number, title, and location of distribution center to each side of the upper edge of the record jacket or album folder to facilitate finding items arranged in vertical racks.
- A label, giving the call number, title, distribution center, the speed and the time required to play the record, should be affixed to one side of the record.
- Records that are loaned to individual teachers or students should have a book card pocket and due-back slip on the jacket face or inside the album's front cover.
- Each record in a multi-record album should be identified to show its position in the series.

Listing for Catalog

R104 A. *Voyages of Christopher Columbus*
Social Studies Grade 5
12 in. 33⅓ r.p.m. 15 min.
Columbus' first trip to the "Indies"; what happened when he returned to Spain.
B. *Landing of the Pilgrims*
Pilgrims flee Holland; trip of the Mayflower; first Thanksgiving.

Record Card and Inventory Information

Record no. A. *Voyages of Christopher Columbus*
R120 B. *Landing of the Pilgrims*
Social Studies Grade 5
12 in. 33⅓ r.p.m. 15 min.

A. Columbus' first trip to the "Indies"; what happened when he returned to Spain.
B. Pilgrims flee Holland; trip of the Mayflower; first Thanksgiving.

Enrichment Teaching Materials Date Purchased
246 Fifth Avenue Cost
New York, New York 10001

Handling and Storage

Records and record players require care and a periodic check-up in order to insure satisfactory use.

A list of recommendations and suggestions can be attached inside the cover of each record player.

Suggestions For Using the Record Player

- Play on a flat surface.
- Keep cover closed when not in use.
- Do not leave power lead connected to the electrical outlet.
- Store record player in a safe place especially during vacations.

Care of Records

- Store records vertically in their jackets.
- Hold records by the edge, or with your thumb on the label.
- Clean the record with a specially treated, lintless cloth using a circular motion in the same direction as the grooves.
- When placing or removing the needle from the record, lift the pick up arm vertically.
- Check the speed of the record, and the speed of the record player. Use the correct needle.
- Return record to dust jacket and store in a safe place.

Storage of Records in a Center

- Disk recordings are usually stored vertically in segmented racks and arranged according to disk diameter.
- Keep records stored in fairly compact envelopes or slots, since warpage is likely to occur if records are allowed to sag. Corrugated cardboard squares may be inserted to provide the necessary compactness.
- When records are being shipped from building to building, they should be packed securely in a fiber case. An attached warning label will caution users not to place records near radiators, heating vents or on windowsills in direct sunlight.

Maintenance and Care

Special Services for Record Players

Record players are usually available in every school. They are easy to operate and to care for. In the majority of school systems more money is spent on servicing record players than on any other piece of equipment. Proper care and maintenance service can help solve this problem and also avoid unnecessary damage to records. Special suggestions are:

1. Convert all existing styli and cartridges to the diamond type. The diamond stylus is higher in price but is the most economical in the long run. A stock of replacement cartridge and stylus of appropriate type should be maintained for ready use. Standardization, whenever possible, is recommended.
2. Use a camel's-hair brush to remove dust and dirt from the stylus and cartridge. When the record is dirty this has to be done frequently.
3. Use a microscope to examine stylus for wear. There is also a special test record that can be purchased at any record shop.

With this record, you can quickly note wear of the stylus by the change in color of the grooves over which the needle has traveled.

4. When not in use, the record player should be returned to the assigned storage area.
    - Pickup arms need to be fastened down and kept from banging during transit.
    - To protect from dust and dirt keep cover closed when not in use.
    - Do not store records or record players near a heat source or where direct sun will strike them in the classroom.
    - In schools where theft is a problem, it is suggested that expensive equipment be kept out of view of doorways.
5. Turntable speed checks need to be made by means of stroboscopic card-type disks.
6. Summer service is also suggested to remove dirt and dust accumulation in the hard-to-reach places. With proper care and preventive service record players should give good service.

8mm. Film

GUIDELINES

Significant changes are occurring in the 8mm. medium which do not at present justify quantitative guidelines. Because of the important contribution of these films to individual and small group learning, however, conservative quantities have been suggested. As equipment and materials become more stabilized and as sources expand, schools should increase the quantities beyond the amounts suggested in these guidelines.

Elementary

8mm. Projector

Should have one available for experimental purposes, but no specific guideline at this time. Schools will have to acquire as the field develops and materials become available.

Secondary

8mm. Projector 1 per building.

Number will necessarily have to be based on availability of film cartridges. There is a trend toward individual learning stations or independent study and additional equipment will be needed as program develops.

Location of Collection

At the present time the 8mm. projectors deserve an important place in the instructional program. Short film length, ease of showing and reshowing, and single focus of attention combine to heighten their impact on a particular point of study. The projectors and films are inexpensive and easy to handle which places them with the materials that are recommended for small group instruction, independent study areas, and for home use.

Selection

The number of companies producing 8mm. films for classroom use is spectacular in growth. With the introduction of super-8 many of the experienced companies of 16mm. films are now engaged in the production of 8mm. films both silent and sound.

Eight mm. films with sound are available with magnetic and optical tracks in a variety of picture formats. Until there is a consensus that one film format is superior, school districts are faced with a variety of projectors for the many types of 8mm. films. It is the responsibility of the director of educational communications to evaluate developments in this field and plan accordingly.

A current list of educational producers and single concept films available in Magi-Cartridges may be ordered from:

Technicolor
1300 Frawley Drive
Costa Mesa, California 92627

Handling and Storage

Single concept films are kept in sturdy boxes. Many companies now furnish plastic containers. They are labeled and stored on shelves or cabinets in the same manner as the filmstrip collection.

Teacher guides and other printed information are kept in the same box with the cartridge.

Maintenance and Care

Standard 8mm. film is cleaned and spliced in the same manner as 16mm. film.

Single concept film is sealed permanently into a transparent plastic cartridge which is inserted into the projector. There is no threading, fingers never touch the film, and the main cause of damage is eliminated.

Unique Characteristics

Single-Concept

The single-concept films range from 30 seconds to 5 minutes in length: each stresses one idea for which motion is essential. A still picture clutch permits the teacher or pupil to stop on any frame to view material more closely. There is also available a remote control three-way switch which allows the operator to run the film-loop in the normal way, stop the film on any frame, advance the film one frame at a time and return to movie operation.

The film cartridge system requires no threading or rewinding. The cartridge is simply inserted in the proper place in the projector and the machine is turned on.

Projection

Super 8mm. projectors are most satisfactory for forward projection on a large screen for class use. Rear view projection screens are a tremendous aid in projecting 8mm. films. The room need not be completely darkened which makes the medium particularly useful for preview, individual instruction, and small group work. A wide angle lens is recommended for use with rear projection screens since the shorter throw means the projector and screen take less space. In addition there are rear-view screen and projector combinations which can be used in learning spaces throughout the school building.

Local Production

The 8mm. film offers unique possibilities for local production. The cameras are inexpensive, simple, and easy to operate. The cost of camera and film is within the reach of every school. Preparing talent, writing scripts and planning productions are worthwhile experiences at all levels of instruction.

Single concept films can be produced in the same manner. After the film is shot, and processed through your local photo store, it can be mounted in a cartridge.

Slides, Still Pictures, Charts and Other Educational Materials

GUIDELINES (MATERIALS)

Due to the state of the field and the nature of certain media it is extremely difficult, if not impossible, to develop quantitative guidelines for all types of audiovisual materials. The list below includes some of these materials. Even though quantitative guidelines are not recommended at this time for these materials, it must be recognized that they do make a unique contribution to the instructional program and must be made available for instructors' use. Each item listed must be supported with a fair share of the funds expended for media. The overall objectives of the media program should be to provide a wide variety of educational materials with no one item dominating the program.

Slides

The value of slides in the instruction of numerous subjects and at various levels has been repeatedly proved. They are inexpensive, available from many commercial sources, and can be produced locally.

Techniques of teaching with slides are similar to those used in teaching with other visuals. However, slides do not include captions or titles, so it is important that all slides should be titled and, whenever possible, that a written script or guide be provided for each series of slides. This information can be a written script, a disk, or a tape.

Distribution and Storage

Individual slides are usually located in a school collection or assigned on long term loan to the teachers. Slides available from district centers are packaged in sets and classified according to specific unit topics. It is recommended that such sets be stored with narration in special slide boxes, plastic folders with pockets for slides, or in standard trays for the projectors.

Processing and Labeling

1. Label the container with call number, set title, name of distribution center, and number of slides in the unit.
2. Identify each slide with the call number and title of the set. An additional number or code letter should be used to indicate the position of the slide in the set.
3. Put a thumb mark on each slide to indicate how it should be placed in the projector according to standard practice.
4. The value and use of the slide determines whether to mount between clear glass.
5. The package should contain a list of individual slides and whenever possible, provide a teacher's guide giving additional information.
6. Slides or duplicate copies can be added to multimedia kits.
7. A narration may be added to a slide series and used in the same manner as a sound filmstrip.

   The story or sound can be:
   - Informal comments given while the slides are projected
   - A formal reading of a narration or script
   - A record or tape with an audible signal to change slides
   - A record or tape with an inaudible signal which electronically controls slide changes (requires an automatic slide projector and a record player or a tape recorder)

Still Pictures, Charts and Posters

For years educators have recognized that charts, illustrations, maps, photographs and other flat picture materials are essential to good learning and good teaching. Every teacher should have a good collection of all types of visuals available in the classroom. Part of this collection is unmounted until a need arises for use on a bulletin board or study display. The size, color, and type of mounting can then be selected to give a more attractive appearance. In addition to the classroom collection there should be a well centralized collection of these for each school. Expensive series of visuals sets that cover special areas, and duplicate copies are housed at the district center. Sets of still pictures, charts, posters, and other visual materials for bulletin boards and flannel boards are recommended for curriculum kits.

Processing

Still pictures housed at a center are usually collected in a series or a set. Size is a determining factor when selecting pictures that must be packaged and shared in more than one location. Pictures are packaged in heavy manila envelopes and stored in a filing cabinet. There are jumbo filing cabinets available that permit storage of most of the still pictures and photographs now used for instruction.

Pictures and other visuals that are to be handled by students should be mounted on stiff cardboard and laminated or stored in a plastic envelope. Additional information about the picture and questions or suggestions for participation by the student greatly increases the learning value of the visual. This information can be typed and pasted on the back of the mount or in an attached envelope.

Labeling

The covering envelope or package should be labeled with the name of the distribution center, the catalog number, the title of the series, the suggested grade level, and subject area(s). A list of the titles of the individual pictures in the set is recommended and can save valuable time in locating special materials. Each visual in the set should be marked with the catalog number, the title of the series, and the title of the individual picture. Labels are attached to the upper-left corner on the reverse side of the mount so that pictures can be identified with a quick flip.

Maps and Globes

The size and usage of classroom maps and globes dictate that they be located in the classrooms or in curriculum departments so that they are available to the teachers and students at all times. Additional copies are housed in a school library or instructional materials center for use by students. Sets of desk maps, outline maps for student use and maps that can be folded or packaged are housed at a school or district center. All maps and globes should be evaluated, purchased and inventoried from a central location.

Maintenance and Care

To preserve colors and map surfaces, spray with a clear plastic (check with your art department). When maps are folded the edge and folds can be reinforced with cloth tape to prevent wear. Larger maps can be rolled and stored in mailing tubes.

In classrooms where several maps are housed and used frequently, maps are mounted on racks above the chalkboard, so that they can be stored out of the way when not in use, or when the chalkboard is being used.

Curriculum Kits

A recent development, at least in terminology and in concept, is the cross media use of materials and related activities appropriate to a specific topic. By cross media we mean the use of more than one type of material for the teaching of a specific concept or topic. There are times when one medium is more appropriate than another in teaching a particular group. Then too, a certain medium may be better for motivation, development, or culmination. The resourceful teacher uses the material which is more effective for the occasion. It is with this correlated application of educational communications media in mind that a package, or kit, of teaching materials is planned.

There are certain considerations which must be taken into account when kits are being developed and used:

1. The development of a kit involves a team effort of teachers, curriculum supervisors, and specialists in print and nonprint materials. Production technicians may be needed to design and make materials that are not available commercially.
2. The director of educational communications supervises the development and distribution of the kits. He or his staff:
   - Identifies all the materials available

- Arranges for the preview and evaluation of the materials selected
- Services the equipment and materials used
- Furnishes technical help where needed, and when special facilities are used, such as, in a team teaching situation using a large lecture hall or rear projection.

3. Some materials such as video tapes and 16 mm. films are expensive and are not included in kits. With advanced planning, however, these materials, when needed by a teacher, can be rented or obtained from regular sources.
4. When the materials are selected for a kit, the container or package should be designed with compartments so that the items can be returned safely to the distribution center.
5. Materials selected should be of interest and suitable for the grade and the subject area of the topic selected. The vocabulary and contents of nonprint materials are important factors to consider in selecting materials.
6. The subject area and the length of time required to cover the topics are important factors when determining the amount of materials in a kit. It might be better to make several smaller kits when any one collection becomes too large.

Suggested materials for kits:

teacher's guide
filmstrips
8 mm. films
sound filmstrips
tapes
slides
shortstrips
bulletin board materials
manipulative items
maps
records
transparencies or master copies
still pictures
charts or posters
art prints
booklets
flannel board items
objects, specimens or models
student work sheets or master copies for duplication

Tests

16 mm. films*
video tapes*

7. A media kit for a unit of the curriculum should contain:
   - a list of all materials in the collection

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* The administration should be aware of the cost and special care required to handle and service films and videotapes. Unless a good supply of materials are available in the district and the utilization of these materials justifies the cost, it is not recommended that films and videotapes be included in curriculum kits. The kit could contain a recommended list of films and videotapes available in the district and with a little planning could be loaned to the teacher at the proper time.

- a handbook for the teacher giving a brief survey of the curriculum covered, recommended materials to develop each concept and activities that can be carried out in the classroom by teacher and students
- a teacher's guide for the filmstrips, records, tapes and other materials should be packaged with each item or in a master notebook.

8. All materials in a kit should be labeled giving the name of the distribution center, the catalog number, title of the unit, the grade level, and the subject area(s). Every item in the kit should be labeled in order to identify the master title and the location of that item in the kit.
9. Materials in a kit should be frequently revised and updated.

Radio

GUIDELINES

Elementary

	BASIC	ADVANCED
Radio-Receivers	1 per school plus one battery type for emergency purposes	1 or more per building as is dictated by instructional needs plus central distribution system (AM-FM)

Secondary

	BASIC	ADVANCED
Radio-Receivers	3 per building	1 per 10 teaching stations

1 per building should be battery operated
1 set all-wave for language use

The Empire State FM School of the Air, Syracuse, N.Y., began in 1947 and now serves schools in all parts of the States.

Stations Broadcasting Empire State* FM School of the Air Programs are:

Locality	*Call Letters*	*Megacycles*
Binghamton	WKOP-FM	99.1
Bristol Center	WMIV-FM	95.1
Buffalo	WBEN-FM	102.5
Cherry Valley	WJIV-FM	101.9
DeRuyter	WOIV-FM	105.1

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* The Empire State FM School of the Air discontinued broadcasting July 1968. Audiotape copies of the programs are available from the New York State Education Department, Division of Educational Communications.

Geneseo	WGSU-FM	88.1
Hornell	WWHG-FM	105.3
Ithaca	WEIV-FM	103.7
Ithaca	WHCU-FM	97.3
Niagara Falls	WHLD-FM	98.5
Norwich	WCHN-FM	93.9
Olean	WHDL-FM	95.7
Patchogue	WALK-FM	97.5
Poughkeepsie	WKIP-FM	104.7
Rochester	WROC-FM	97.9
Schenectady-Troy-Albany	WGFM	99.5
Syracuse	WSYR-FM	94.5
Wethersfield Township	WBIV-FM	107.7

The Preprogram Bulletin is a biweekly publication of the Empire State FM School of the Air, Syracuse University Television-Radio Center, Syracuse, New York 13210.

Membership rates are based on the number of full-time elementary classroom teachers in Grades K-6 in the subscribing school or school district.

No. of Full-Time Classroom Teachers	*Rate*
1-5	$ 35.00
6-10	52.00
11-15	69.00
16-20	86.00
21-25	103.50
26-30	121.00
31-35	138.00
36-40	155.00
41-45	172.50
46-50	189.00
51-75	207.00
76-100	250.00
101-125	294.00
126-150	337.00
More than 150	$380.00
More than 350	Special Rate

Program Schedule

The majority of programs are produced by the schools that are members of FM School of the Air, while others are produced by the central office or other educational organizations. The majority of programs are 15 minutes in length and are presented twice during the week on different days and in different time slots in order to give the best possible coverage to fit all programs. Radio programs may be taped to overcome the problems imposed by scheduling.

A sample list of radio programs are:

"Using Keys to Mathematics" Upper Elementary
"Science Adventures" Upper Elementary
"Community Helpers" Primary
"Let's Sing" Primary
"We Know a Story" Primary
"Youth Concerts" Upper Elementary
"Tales From the Four Winds" Intermediate

Educational Television

GUIDELINES

		BASIC	ADVANCED
TV Receivers	**Elementary**	1 23″ receiver for at least 1 classroom for each grade level for which programs are available.	1 23″ receiver per teaching station. Viewing number not to exceed 23
	Secondary	1 23″ receiver per department where programs are available	1 23″ receiver per 23 viewers in a classroom where programs are available

The increasing scope of knowledge and greatly expanding population are forcing educational systems to search for new methods and materials to aid the instructional process. The Education Department believes that instructional television is one means for bringing another meaningful dimension to instruction and to promote the dissemination of educational information.

The State is now actively involved with four modern methods of instructional television transmission: open-circuit, closed-circuit, CATV, and 2500 megahertz.

Open-Circuit Systems

Open-circuit broadcasting is the transmission of instructional, educational and cultural programing on one channel to schools and homes within the reception area of an ETV station signal. The method offers

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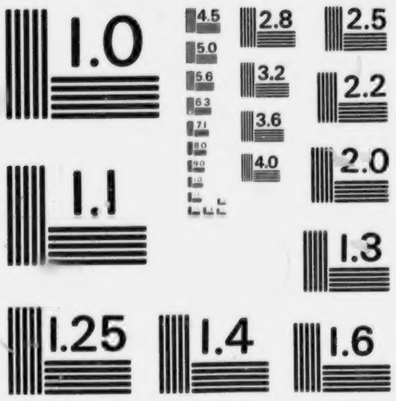
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1.25
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1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

the advantage of program availability to all who have receivers regardless of school affiliation. For example WNDT, channel 13, New York City, and WMHT, channel 17, Schenectady, are able to serve their school district as well as other districts in the signal area. Interested parties have the opportunity of viewing the daily broadcast schedule. Open-circuit stations also offer to their area the community service of educational and cultural broadcasts in the evening. There are seven such open-circuit television stations operating in New York State now, and two more are to be activated.

Closed-circuit Systems

Closed-circuit television transmission makes possible the distribution of programing by cable or microwave network to specific television receivers on as many channels as may be required. This method is aptly suited to an individual school building or, in some cases, a school district. Among its advantages are at least 12 channels, immune to atmospheric and external interference and local school control of programing. The Baldwin Public School and the Middle Country District, Centereach, have successfully integrated cable systems with their own teaching methods. Many other school districts in the State have achieved similar results.

CATV—Community Antenna Television

CATV is a cable facility which brings open circuit television signals to the homes of a community unable to receive the signals via a conventional rooftop antenna. Such a situation is generally due to distance from the transmitter or to topography or physical obstructions. In New York State, CATV systems at Malone and Ilion have reserved one channel for educational purposes. These communities are now able to acquire programing from the State Education Department and national libraries for rebroadcast in their areas.

2500 Megahertz

2500 megahertz ITV serves 31 channels which are reserved for the transmission of educational and cultural programing over the airways to specified reception sites. The television receivers are equipped with a special antenna-converter apparatus to receive the low power signal. School districts, and educational organizations and institutions have taken advantage of the versatility of 2500 megahertz capabilities since up to four programs can be broadcast simultaneously from a single studio to as many schools or centers as are located within the transmitter's range. 2500 megahertz is extremely flexible. The city of

Rochester uses three channels covering over 46,000 students with 120 broadcasts per week. The Plainedge Public Schools was the pioneer in 2500 megahertz broadcasting.

State Advisory Services for ITV

New York State Education Department's Division of Educational Communications is responsible for advising school administrators on the development of television systems. The Bureau makes available professional help on ITV preliminary planning, equipment, production and utilization for elementary, secondary and higher institutions of learning. A number of publications, including 2500 MHz broadcasting information, are available.

The ETV Councils of the State

Open-circuit educational broadcasting in New York State has developed through the community-station concept. Continuous operation and support lies in the hands of the ETV councils and the local community. These councils assume the responsibility for in-school and adult educational and cultural programing in their localities. The independence of each council is assured although it must be chartered by the New York State Board of Regents. Currently, there are eight ETV councils, of which five carry on broadcast operations. The State maintains a professional staff to assist ETV councils in all phases of their development and programing, both on a conceptual and financial basis.

Technical Support Section

The Bureau of Mass Communications makes available to educational institutions of the State over three million dollars of instructional video tape acquisitions. Art, literature, music, science, mathematics, foreign languages, and the social sciences are some of the subject areas for which materials are available. These materials may be borrowed without charge for use on slant-track video tape recorders for closed-circuit use and for 2500 megahertz transmission.

Programed Learning

Programed Instruction and Teaching Machines

Definition of Terms

Programed Instruction

The utilization of programed materials in achieving educational objectives to produce greatest learning the following elements of programed instruction must be present:

1. Active response by the students.
2. Small steps in which careful control of stimuli produces gradual increments in mastery of the subject.
3. Immediate feedback for each response.
4. Self-pacing or individualization of the rate at which the learner masters the material.
5. Low error rate for the individual learner as a consequence of the effective operation of items 1-4 above.

Teaching Machines

Devices that house, display and present instructional programs. Provisions for suitable responses on the part of the student and tutorial feedback must be present. By these criteria, equipment used in teaching do not qualify as teaching machines.

Teaching machines may or may not score responses or tally errors. With constructed response programs, the error analysis must be left to the student.

Programs and Programing

The general procedure for the introduction of programing into a school district are as follows:

- Read as much available literature as possible.
- Utilize qualified consultants.
- Visit places where programed instruction is now in use.
- Obtain sample materials for analysis.
- Use the media services furnished by the Division of Educational Communications.
- Conduct inservice workshops.
- Allow trained personnel time to experiment, investigate and use programed instruction.

The more the faculty knows about programed instruction, the better the results will be. Formal training in the selection and use of the medium is desirable. The trained teacher will be the best asset your district can have.

Responsibility for Program Selection and Evaluation

The responsibility for program selection and evaluation is the task of a knowledgeable group of educators adequately trained in the special skills necessary to understand the unique nature of programed materials. Though some of the responsibilities will overlap on the local level, a team concept of evaluation is desirable.

Three types of specialists are necessary—the subject area specialist, the curriculum specialist, and the educational communications specialist.

The subject area specialist is responsible for all aspects of content, quality control and authenticity of subject matter presented in a programed format.

The curriculum specialist is responsible for the overall role programed instruction plays in the curriculum. The approaches to be taken and the adaptability of the material to meet student needs are a prime concern of this specialist. Finally, this specialist needs to determine the methods to be adopted in terms of course units, length of time involved, and any other problems that may present themselves insofar as the curriculum is concerned.

The educational communications specialist has the responsibility for selection and evaluation of material in respect to its audiovisual format. He must have the ability to perform administrative duties required to evaluate educational and technical specifications. He is further charged with the logistics of storage, distribution and dissemination of information on the medium. This specialist will often coordinate the efforts of the selection and evaluation team.

Program Development Methodology

In addition to using commercially prepared programs, individual teachers or a committee of teachers may program material for specific school requirements. This is a time consuming and difficult task but programs designed in this way are frequently very valuable. Programers should remember that programed instruction is a method for structured independent study in which the student is guided through a sequence of carefully prepared steps.

The advantages of using programed techniques and materials in teaching and learning are:

- Individual differences are recognized.
- The learner takes an active part in the lesson. The student must respond in some way.
- Immediate results are made known to the student.
- The student must focus attention on a limited amount of material at one time. The organized nature of knowledge is emphasized in structuring the program.
- The program reinforces knowledge of learned material and provides for spaced review.

- Programed learning reduces anxiety because the learner is not threatened by the task—he knows he is learning what is required and gains the satisfaction that this knowledge brings.

Steps in Planning and Writing a Program

1. A program like any other form of instruction is limited in scope. In order to design a program the following points concerning the learner should be kept in mind:
   a. Intelligence level
   b. Background knowledge of the subject
   c. The socioeconomic level of the students
   d. Interests
   e. Motivation
2. Specification of behavioral objectives. Spell out in detail the educational outcomes of the program.
3. Write the program.
4. Try out the program with a single student or a small group. Rewrite the program if necessary (write-test-revise).
5. Test and evaluate the program.

Community and Cultural Resources

The educational school journey or field trip has many advantages in addition to bringing the community and the school closer together. Through a trip, properly planned and carried out under school supervision, the students will be provided with firsthand experiences to which they might not otherwise be exposed.

1. Opportunities for direct experiences are provided.
2. Opportunities to stimulate interest in art, music, nature, and vocational activities are offered.
3. Opportunities for correlation of school work with live activities are presented.
4. Pupils' interests and learnings are developed by providing an enriched informational background.
5. Group experiences are provided which form the basis of classroom discussion and creative expression.
6. Group living experiences are provided that result from cooperative class planning for a trip.
7. Pupils are provided with an understanding of the social and economic community in which they live.
8. Pupils are provided with an understanding of civic responsibility that enables them to participate effectively in home, school, and community life.
9. Pupils are provided with an opportunity to develop their powers of observation and inference.

Places To Visit

The director of educational communications can be of valuable service in seeing that full use is made of the educational and cultural resources of the community. It is his responsibility to coordinate the planning and evaluation of the program as approved by the administration and to provide teachers with information on places approved for visitation.

Catalog Information

Name of resource ____________________
Address ____________________ Telephone __________
Grade __________ Size of group __________
Subject ____________________ Length of visit __________
What time of year are visits preferred? ______________
What time of day are visits preferred? ______________
How much notice is required? ____________________
Are guides provided? ____________________
Transportation information ____________________
Journey stops if required ____________________
Describe briefly the activities that can be visited in the establishment? ____________________
What special instructions are necessary for visitors? __________
____

Preparation for a Field Trip

Teacher's Guide

Classroom Preparation—Background Information

Purposes of the journey
What may be observed?
Suggested classroom activities:
Related materials:
- books
- instructional materials—films, filmstrips, etc.

Preparation for the School Journey

A thoroughly formulated trip procedure is essential for a successful trip. Careful selection of the place to be visited should have a high priority in the formulation of any plans.

- Select the best place.
- Does the trip fit naturally into the work that the students are

doing in the classroom?
- Does it have sufficient value to justify using the time of the students and the teacher?
- Will it provide information unobtainable in any other way?

Securing Permission

Permission for visiting should be secured from the school authorities, the place to be visited and from the parents. The principal should be informed at all stages in the planning required to carry out the school journey. The majority of schools provide a special form to secure the permission of the parents before a student leaves the school grounds. A signed Parent's Approval Form must be on file in the school before the trip. Other arrangements within the school should be made for students who do not return a signed slip.

Permission Slip for Field Trips

Name of School
Address

I desire to have my son ___ daughter ___ go with the group
from Grade ____ School ____________________ which is
visiting ______________ on ______________________.
I will be responsible for his ___ her ___ conduct on the trip.
Signed __________________________
Parent or Guardian
Date ____________________

The teacher as a representative of the school is responsible for the supervision and safety of the class at all times. The permission slip is not recognized as a legal document in a court of law but it is hoped that in case of an unavoidable accident a lawsuit will not follow. In most states, the liability of teachers or other representatives of school boards usually is recognized only when actual negligence is proved.

Special Arrangements

Some school districts have special restrictions which should be checked before planning any school journey. The school principal will usually have materials or details of special regulations regarding the organization of a school journey.

- Are school trips recognized as part of the instructional program?
- Does the district provide transportation?

- Does the insurance cover educational activities off the school property?
- How many adults are needed to supervise the class? (There should be at least one adult for every 10 students)
- What special rules of conduct and safety are required for the journey?

Field Trip Pointers for Parent Guides

In many school districts parents are permitted to act as guides or chaperons for field trips. With a little planning and preparation this practice has proved very successful. The teacher should prepare the parent guides and all personnel who plan to make the trip. Everyone should be aware of the expected purposes of the trip and should be informed at all stages of preparation.

Parents who will act as guides are advised to:

1. Attend the planning session
2. Visit or read about the place to be visited
3. Fit into the group
4. Control the group at all times

Walking Trips

A walking trip should not take more than 15 minutes of traveling time to the location of the place to be visited.

The teacher should take a preview trip and be aware of all dangerous situations along the way. The principal should be notified of the exact time of the trip, and the route the class will take especially when street crossings are required. It is not advisable to take classes on sidewalks where pedestrian traffic is heavy.

Additional adult chaperons may be required.

Parent approval forms are usually required whenever students leave the school grounds. Check with the school principal.

Most school districts carry liability insurance that will cover accidents connected with all authorized school activities. Check restrictions before planning to take students out of the classroom.

The principal should be notified when a class leaves the room even though they do not plan to go off the school grounds.

A Guide for Students

Taking the Trip

Good field trip programs usually include good planning in the classroom before the trip, careful supervision and concern for learning during the trip and the carrying out of worthwhile activities when the class returns to the school. A guide sheet for students could include the following types of information:

Preparation

- Permission from school authorities, place to be visited, and parents.
- Provide for supplies needed on the trip, such as money, lunch or special clothing. Discourage carrying more money than needed, and limit the type of purchase.
- Prepare a list of questions that you want answered.

Rules and Regulations

- Use the "buddy" system. Make each pupil responsible for knowing the whereabouts of his buddy at all times.
- Train leaders to stop at corners and designated places along the way.
- When working with primary children, arrange for all to take a drink and visit the toilet before leaving the school building.
- Review required safety rules for traveling on bus or train.
- Many places also have special rules and regulations that must be kept.

At the Location

- Use a speaking voice. Remember to be a good listener when the teacher or guide is speaking. Ask questions at the proper time.
- Take notes of what you want to remember.
- Use your eyes. Be careful not to touch object or equipment unless given permission.
- Remember to use "please" and "thank you". When you are leaving thank your guide and the people who helped you during the trip.

The Return Trip

- Know the time and the place to meet for the return trip.
- Have the class check carefully all their belongings.
- Have a list of things you are to observe on the return trip. If the trip requires a considerable length of time, it is a good idea to have a planned program. This program can include activities such as group singing, contributions by gifted students, or games.

Evaluation

All school journeys deserve an evaluation by both students and teachers. How the experiences and the information gained on the trip is used in the classroom and the amount of new information gained are extremely significant. Evaluation through discussion or a written assignment is required in order to secure the maximum benefits of the school journey.

Bibliography

Books:

Children explore the environment. Bureau of Elementary Curriculum Development, New York State Education Department, Albany.

Historic sites of New York State, Supervisor of Historic Sites, State Education Building, Albany.

Films:

Community resources in teaching. University of Iowa. 20 min. sd. b & w. 16 mm.

Field trip to a fish hatchery. Coronet. 11 min. sd. b & w. 16 mm.

Recent Developments in Educational Technology

With the increased aid to education from the State and Federal Government, many new ideas using technology have been instituted in our schools. While still in the experimental stage these new developments have shown improvement in learning and are worthy of continued study.

The emphasis of education today is on individualized instruction. The cost of this type of instruction within the framework of today's classroom would be fantastically expensive. But with the development of television data processing, computer assisted instruction, dial select systems, information retrieval, and environmental response systems such as the talking typewriter and prepackaged curricular materials, it becomes possible to teach a student at his own pace at a reasonable cost per student.

The director of educational communications should be aware of the recent developments in technology, both equipment and materials. They should be a source of information to school administrators interested in developing new programs.

Northern Westchester's BOCES
Yorktown Heights, New York

Computer-Assisted Instruction (CAI)

Within the last few years (CAI) has emerged as a promising method for providing individual instruction. The speed, memory, and logical power of the computer have been utilized to provide simulations and other forms of instructional programs.

At the BOCES Center, students working at a terminal consisting of a computer-controlled typewriter, a tape recorder, and a slide projector are presented with a series of instructions, questions, or problems to which they react by typing out responses. In turn their responses are analyzed and reacted to by the computer.

In one of the games the student adopts the role of a Sumerian priest-king in the year 3500 B.C.; in another, the role of the owner of a small toy store and a manufacturer of surfboards; and in the third, the part of an (AID) advisor to Sierra Leone.

An important feature of the newer computers is their ability to handle many students simultaneously through time-shared systems. There are many indications that computer systems may be able to provide a partial solution to the perennial problems of mass education: inefficiency, curricular limitations, inadequate motivation of students, and general neglect of individual needs.

For additional information or permission to visit the demonstration in the BOCES Center contact:

Center for Educational Services and Research
845 Fox Meadow Road
Yorktown Heights, N. Y. 10598

Bedford Public Schools
Central School District 2
Bedford, New York

Dial Select System

The Bedford Public Schools are presently composed of four (K-5) elementary schools, a middle school (6-8) and a high school. An important part of the middle school, and eventually all the schools in the district, will be the Dial Selection System.

The philosophy of the school system was developed to promote learning through individual instruction, team teaching and grouping. A school building was then designed and built to accommodate the planned program. The location of classrooms, a central library unified arts-media center building, flexible space and walls contribute to the effective use of DSS. A 2 year program for inservice teacher education paved the way for the integration of technology into the daily instructional services.

The DSS is designed to provide students in small and large groups and individually in 30 carrels or individual learning stations an opportunity to view and listen to educational programs delivered by films, tapes and television. The system is engineered to handle any number of stations enabling students to simultaneously observe or listen to programs without affecting each other. The educational appeal lies in the flexibility of the system. Students in numbers best suited for any specific educational experience have readily available a wide selection of educational materials designed to fit their learning needs. The expanded use of these materials will not only strengthen curriculum but will relieve the teacher of some of the routine chores of obtaining and setting up the materials and equipment.

In order to better understand DSS, a closer examination of the three main components is necessary.

1. The Media Center serves as a master control point for the system. This area is equipped with a program distribution and monitoring console, video switching systems, and all program originating equipment. The console will distribute and monitor programs and will be able when necessary to enable the technician to communicate with persons at any of the stations equipped with dial control plates.
2. Each carrel will provide the student with an opportunity to select any of the available materials using a dial control monitor mounted on the wall. The carrels are booths built for acoustical and physical isolation and can handle one or two students. The materials which Bedford uses are conventional distribution of films, filmstrips, slides, records, etc., a regional film library, videotapes available from the Division of Educational Communcations, and videotapes produced by the Bedford staff in the studio or in the classrooms.
3. The full equipment and installation cost of the Bedford Middle school's dial access system is approximately $250,000 for about 1,900 pupils. At the present time it is impossible to estimate the cost per pupil-viewing hours as the program is still in the developing stages.

The DSS is supervised by the Director of Educational Communications. Arrangements can be made for individuals or small groups to visit the center on Thursdays.

Environmental Response Systems
the Talking Typewriter

The talking typewriter is an environmental response system operated online by a computer based program with visual and mechanical display. The display is not computer based but electromechanical similar to a language laboratory or an IBM 1500 system.

The system relies on a combination of sight, sound and touch. It reacts to the stimuli with various forms of rewards and corrections programmed into the console. It can help students learn to read, type, take dictation and even prepare compositions. Beginners, for example, see letters or drawings of pictures on screen, hear the machine speak, correct what they type, and see what has been typed appear printed on paper. Touch a key on a typewriter and the machine can be programed to say that letter at the same time the letter is typed on paper. Programs fed into the computer system associated with the typewriter will help develop skills. The machine will audibly and mechanically require a correction. Picture drawings or graphs on a screen illustrate materials included in a program. The response system encourages students to experiment. The use of the typewriter is usually a part of a total program and used to reinforce classroom instruction and other instructional activities of the school. Industry and education have combined in their efforts to supply programs, train teachers and students who will use the machines.

Board of Education of the City of New York
Responsive Environment Program
2560 Linden Boulevard
Brooklyn, New York 11208

For over a year, a wide variety of students—ranging from kindergarten through functionally illiterate adults—has been involved in the "Talking Typewriter" Program.

Funded by the Office of Economic Opportunity and sponsored by the Board of Education, the program is designed to evaluate both the responsive environment process and the use of the computer in the teaching of initial and remedial reading.

The environment includes an interrelated network of typewriter, projector, viewer, speaker and voice recorder. The computerized typewriter allows its user to explore freely. There are no punishments when a wrong key is punched. There is no competition. It has flexible logic. It never varies. It never, never makes a mistake.

The computer can be programmed vocally and visually, or both together. When a letter is selected by a recorded voice, all the remaining keys are locked. The machine waits indefinitely while the child punches away until the right key is hit before it calls automatically for the next one.

In addition to several commercially prepared programs, there are many individual programs prepared for students whose interest and requirements indicated the need for special programming.

Facilities

The area used is approximately 10,000 square feet, half of which is occupied by the Laboratory. The remaining space is used for classrooms, conference room, program preparation rooms, and offices for clerical staff.

Around the perimeter of the Laboratory area there are 18 soundproof "Talking Typewriter" booths. These are equipped with one-way glass and monitored by assistants. Laboratory operation is supervised by licensed pedagogic personnel. Educational decisions are made by the professional staff.

Readers who desire further information or wish to visit the Center may write to Dr. Benjamin L. Israel, 2560 Linden Boulevard, Brooklyn, New York 11208, or telephone 212: 649-9595.

Chapter VIII

COMPONENTS OF AN ADEQUATE PROGRAM

Budget for Educational Communications
The District Center

GUIDELINES (ELEMENTARY AND SECONDARY)

Materials Budget

To provide for a well-rounded materials program it is recommended that the basic complement of films, filmstrips, and recordings be considered capital equipment; and be purchased with such funds. To provide for the ongoing materials program, including maintenance and replacement but not expansion, no less than one percent of the average per pupil cost in the school unit should be spent per year per student. The one percent would include film rentals (if no basic film collection is started) and subscription television, but would not include salaries, building construction or remodeling, CCTV installations, or electronic learning centers.

To provide for an advanced materials program the one percent figure should be increased to 1.5 percent.

Equipment Budget

The capital expenditures necessary to secure the equipment recommended herein should be calculated from the price of the equipment. This figure will necessarily vary from school to school due to the range in equipment prices and the excellence of the equipment programs developed.

Today education is big business and an effective program in educational communications requires money. If we are to meet the needs of the students and teachers in our classrooms, then we must do more than establish goals; we must provide them with the materials, equipment and services to meet these goals. The cooperation of administrators, curriculum people, teachers, and the director of educational communications must be present every step of the way. The preparation of the yearly budget deserves serious consideration and careful planning.

An important function of the Director of Educational Communications is to prepare a budget. The manner in which a school district meets its objectives and develops its policies for the educational program in the community depends on the funds that are provided in the annual school budget. The operation of a successful program in educational communications requires staff materials, equipment, and special school facilities. The budget must also provide yearly funds for the repair, replacement and service of educational equipment and facilities.

It is recommended that when planning an estimated budget based on specific needs that we use a narrative type of format describing projects in terms of instructional objectives usually to be achieved over a period of several years. It is further suggested that you separate the items requested to meet two levels of operations, namely a basic or "must have" level and an advanced or "could use" level.

There are several levels of budget planning.

- A district starting a program might find it impossible to provide enough money in 1 year to finance the required services. This district requires a long-ranged program with specific objectives to be met each year.
- Districts wishing to continue an established program have a standard request for yearly funds
- Districts that are working to improve programs or to bring a basic program up to advanced or preferred levels require an increase in budget.
- School districts wishing to support new objectives, to expand programs underway and to start projects of innovations and research require additional funds in addition to the basic budget.

Standards such as those developed by the Department of Audiovisual Instruction of NEA and adapted by the Division of Educational Communications of the State Education Department can be helpful as guides, suggesting minimums for certain categories of equipment, materials, facilities, and staff. It should be noted that the standards or guidelines are basic and should be used carefully and selectively in this period of rapid change and technological development.

Planning a Budget

Experience in the schools has shown that a program of educational communications is more effective when one person has the full responsibility for its development and administration. In schools where there are separate media services under different departments, the overall planning and distribution of funds should be coordinated at a higher level of administration. Clusters of materials, equipment and services can be costly and ineffective.

It is recommended that school districts wishing to carry on a good program in educational communications consider the following factors:

- Plan the budget for educational communications as part of the total school budget, based on the objectives and needs of the instructional program.
- Finance the program from local tax funds. Special projects or programs of innovations are sometimes given financial support from the State.
- All requests for materials and equipment should be justified to the extent that they are used to improve instruction.

The basic elements of budget planning are:

- Surveying the task to be done
- Ascertaining the tools and services required
- Knowing what resources are already at hand
- Deciding what additional resources will be required

When new programs are planned or when a program is found to be deficient, the total amount of the project can be spread over a period of years.

As a general rule of thumb for budgeting instructional materials and related services, the Department of Audio-Visual Instruction of the NEA has recommended an annual expenditure of about 1½ percent of the annual instructional budget. It should be noted that the 1½ percent recommendations pertain to the conventional educational communications program and is not intended to cover such media services as television, language laboratories, programmed instruction, etc.

Procedures for Preparing a Budget

The exact categories and format for setting up a budget depend on the prescribed guidelines used by a school district. The majority of school districts furnish special budget forms. The following steps for planning a school budget are procedures followed by the Kingston City Schools, Consolidated. This is a continuing budget and the request for funds is aimed at keeping and extending an established program.

Planning a Budget

September—The director of educational communications meets with the teachers. At this meeting the teachers are told what equipment and materials are available in the district. It is suggested that as they carry on their classroom work, they prepare a list of materials and equipment not now available to them that they would like to have.

December—The principal in each school collects the lists and submits a school requisition to the Audiovisual Department.

From these lists the director prepares a system-wide budget which is submitted to the Board of Education. This budget may be cut but if this is done, the director decides how best to make the cut. The director consults with principals, department heads, and others to determine where cuts may be made with the least damage to the program.

Kingston City Schools (Consolidated)

Background Information		
Schools	17	
Teachers	600	
Students	10,500	
Total School Budget (67-68)		$11,000,000.00
Audiovisual Education Department		$ 70,000.00
Central Edcom Center		$ 70,000.00

- Materials:
  - 1,100 films
  - 2,500 filmstrips
- Staff:
  - Director
  - Secretary
  - Clerk
  - Service man for minor repairs (Additional service outside school)

In addition to the services provided by the center additional equipment and materials are housed in each school.

A SUMMARY FINANCIAL SHEET

The following budget represents a sampling of items requested and is not the complete budget.

Captial Outlay	**No. of Items**	**Budget Requests**
Record players	61	$ 3,050.00
Overhead projectors	20	6,310.00
Opaque projectors	6	2,100.00
Maps and globes		1,264.23
Transparency makers	2	778.00
A-V blinds for five classrooms	654 sq. ft. @ 1.25	817.50
Filmstrips		1,259.20
Film Catalog		850.00
Total Capital Outlay		$47,819.45
Supplies		
General supplies		$ 3,000.00
Records requested by schools		78.07
Film rentals		2,000.00
Transparency making materials		2,000.00
Audio tape		400.00
Sub Total		$14,578.07
CAPITAL OUTLAY		47,819.45
SUPPLIES		14,578.07
(Elem. Level at 45¢ per pupil)		2,602.80
(Jr. H.S. at $1.25 per pupil)		2,633.75
(Sr. H.S. at $1.50 per pupil)		2,956.50
GRAND TOTAL		$70,590.57

B ELEMENTARY SCHOOL REQUESTS

Capital Outlay	**No. of Items**	**Budget Requests**
Record players	56	$2,800.00
Tape recorders	2	500.00
Supplies		
General supplies		1,500.00

Audio tapes		125.00
Repair supplies		2,000.00
	Total	$

C JUNIOR HIGH SCHOOL REQUESTS

Capital Outlay		
Record players	3	$ 150.00
Overhead projectors	6	1,893.00
16mm. Movie projectors	2	900.00
Headphones for language laboratories	9	238.50
Supplies		
General supplies		750.00
Overhead projector materials		700.00
	Total	$

D HIGH SCHOOL REQUESTS

Capital Outlay		
Record players	2	$ 100.00
Overhead projectors	2	631.00
Transparency maker	1	389.00
Prepared tapes		83.00
Supplies		
General supplies		750.00
Film rentals		2,000.00
	Total	$

E AUDIO VISUAL DEPARTMENT REQUESTS

Filmstrips		$ 1,000.00
New and duplicate films		17,000.00
Film catalog		850.00
Master books		70.00
	Total	$

F LOCATION OF EQUIPMENT REQUESTED

Record players
1—School A
4—School B
2—School No. 7
—
21

A-V Blinds
5 classrooms at School B
654 sq. ft. @ $1.25 = $817.50

Record players

We are planning to place record players in each second grade classroom throughout the District as a first step in meeting the State minimum standards for record players. This will require 34 record players with our present numbers of second grade teachers. We are also under obligation to replace a number of worn-out record players. Many of these have been in use for 10, 11, or 12 years, and it is no longer economically feasible to repair them. It will require a minimum of 21 record players as a first step in this program of replacement. In addition, there is a need of 3 more record players at School B which currently has but two. There is a need for two at the High School.

It is highly probably that we will have an additional Kindergarten, First, or Second Grade with the opening of school. The last record player is designed to meet this need.

Filmstrips

For practical purposes we have spent nothing on filmstrips for the past 4 or 5 years. The filmstrip library housed in the Audiovisual department has suffered as a result, and those in some of the grade schools, the junior high schools, and the high school need reinforcement.

Presenting the School Budget

The director of educational communications may contribute valuable service to the school district by aiding in the presentation of the overall school budget hearings and subsequently at service clubs and PTA meetings. The director can supervise the production of transparencies for the use of the finance committee, the superintendent and others at the public hearing or may make a complete budget presentation using tapes and slides. Additional information may be secured from Director of Audiovisual, 14 E. Chester Street, Kingston, New York 12401.

Preparing and Writing Bids for Educational Communications Equipment and Materials

An important administrative function of the director of educational communications is to participate and supervise the acquisition of the educational materials and equipment provided for in the school budget. The procedures for purchasing equipment may differ in school districts, but the director has the responsibility for seeing that all purchases made meet the education requirements necessary to carry on an effective program.

When purchasing items in excess of a thousand dollars, the school district is required to write specifications and to advertise for the lowest bid. This practice not only furnishes proof that public funds are being spent in the best possible way but it also helps to insure the delivery of items that meet the educational requirements originally desired. Many school districts in New York State have a purchasing agent who supervises or directs the purchases for the district.

In securing educational materials and equipment, the director should be aware of the following:

- Many educational items are available to school districts under State contracts. These contracts were awarded under strictly competitive conditions and their terms are extended to include other State agencies, such as, a school district.
- In preparing detailed specifications, it is common practice to specify the make and model of a particular piece of equipment and then use the phrase "or equal". The use of particular manufacturers' names or numbers is not intended in any way to bar the equivalent or superior products of other manufacturers.
- Directors will find *the Audio-Visual Equipment Directory* is a helpful guide in writing specifications and estimating costs. This Directory is published annually by the National Audiovisual Association, 3150 Spring Street, Fairfax, Va. The current selling price is $6 per copy.

Many variations exist in the manner in which specifications are written, but the basic procedures are similar. The following format is used by the Ithaca School District:

Specification
for
Audiovisual and Other Instructional Equipment

I ADVERTISEMENT—NOTICE TO CONTRACTORS
II INFORMATION TO BIDDERS
III FORM OF PROPOSAL
IV BID SPECIFICATIONS

I. Advertisement
Notice to Contractors

Sealed bids for Audio-Visual and Other Instructional Equipment for the Ithaca City School District, Ithaca, New York, will be received by the Board of Education at the office of the Board of Education, until 9:30 a.m., March 2, 19___. All proposals will be publicly opened and read aloud at that time in the Board of Education Building, Ithaca, New York.

The Information to Bidders, Form of Proposal, and Specifications may be examined at the office of the Board of Education, and copies thereof obtained. Please direct requests for specifications to the Assistant Superintendent.

The Board of Education reserves the right to waive any informalities in or to reject all bids.

No bidder may withdraw his bid within 30 days after the actual date of the opening thereof, but may withdraw his bid anytime prior to the scheduled closing time for the receipt of bids or authorized postponement thereof.

II. Information to Bidders

1:01 Receipts and Openings of Bids. The Board of Education of the Ithaca City School District, Ithaca, New York, hereinafter known as the Owner will receive bids at the office of the Board of Education until 9:30 a.m., March 2, 1967.

The envelopes containing the bids must be sealed, addressed to the Board of Education and designated as "Bid for Furnishing Audio-Visual and Other Instructional Equipment for the Ithaca City School District, Ithaca, New York" and must contain the name and address of the bidder.

The Board of Education may reject all bids. Any bid may be withdrawn prior to the above scheduled time for the opening of the bids. Any bids received after the time and date specified shall not be considered. All bids shall continue firm and effective for thirty (30) days from opening.

1:02 Preparation of Proposal. Proposals must be submitted on the prescribed form. All blank spaces for the bid prices must be filled in with a typewriter or if in long hand, in ink. Bids shall be made out on the separate "Form of Proposal" a copy of which is included in this book of specifications. All bids must be submitted in sealed envelopes bearing on the outside the words "Bid for Furnishing Audio-Visual and Other Instructional Equipment for Ithaca City School District" and the name and address of the bidder. If forwarded by mail, the sealed envelope containing the proposal and marked as directed above, must be in another envelope addressed as specified in the proposal form, preferably by certified mail.

1:03 Unit Prices. Bids must be made out on forms as provided herewith, with all blank spaces filled in. Signature of the bidder shall be in long hand if a corporation, the seal thereof shall be affixed. The bid security shall cover the aggregate of the base bids. Failure on the part of any bidder to quote unit prices shall be considered an informality and may result in the rejection of the bid. In case of a discrepancy between a unit price and its extension, the lower figure as determined by unit or extension shall prevail.

1:04 Qualifications of Bidders. The owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work. The bidder shall furnish the Owner all such information and data for this purpose upon the request of the owner, including but not limited to the name and address of the manufacturer of the article quoted, the equipment and facilities available to said manufacturer, and a list of similar installations performed by the bidder. The owner reserves the right to reject all bids.

1:05 Deliveries. All equipment shall be bid upon to include delivery, unloading and placing in the building. Deliveries are to be made to (location).

1:06 Guarantee. A guarantee against defective materials, workmanship and design for one (1) year will apply, unless otherwise specified under detailed specifications or where the manufacturer has a longer guarantee period.

1:07 Catalog References and Dimensions. Bidders are warned that all equipment is to be new and unused, first quality, and latest model or design of the manufacturer. No "seconds," "rejects" or otherwise imperfect or substandard quality material will be acceptable. For simplicity's sake in drawing the accompanying specifications, manufacturers names and catalog numbers have frequently been used. In all such cases they are well-known manufacturers whose catalogs are readily available to all bidders. The use of particular manufacturers names or numbers is not intended in any way to bar the equivalent or superior products of other manufacturers.

1:08 Method of Award. Awards will be made to the lowest responsible bidders meeting specifications, by item.

1:09 Bid Security. Each bid must be accompanied by cash, by the certified check of the bidder, or by a bid bond in the amount not less than 5 per centum of the amount of the base bid or bids. Such cash, checks or bid bonds will be returned to all except the three lowest responsible bidders within ten days after the formal opening of bids. The remaining cash, checks, or bid bonds will be returned within 48 hours after the Owner and the accepted bidder have executed the contract, or if no contract has been so executed within 30 days after the date of the opening of bids, upon demand of the bidder at any time thereafter so long as he has not been notified of the acceptance of the bid.

1:10 Addenda and Interpretations. No interpretations of the meaning of the plans, specifications or other contract documents will be made orally to any bidder. Each request for such interpretation must be in writing, addressed to the Owner, and to be given consideration, must be received 5 days prior to the date fixed for the opening of bids. Any and all such interpretations, and any supplementary information or instructions will be in the form of written addenda to the specifications, which if issued will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective addresses furnished for such purposes) not later than three (3) days prior to the date fixed for the opening of the bids. Failure of any bidder to receive any such addendum of interpretation shall not relieve any bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents and attached thereto.

1:11 Power of Attorney. Attorneys-in-fact who sign bid bonds for contract bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

1:12 Samples. The contractor shall furnish samples only upon written notice from the Owner requesting same. Samples, photographs, cuts, descriptive specifications, etc., as requested, will be considered only for the purpose of demonstrating to the Owner the type of material, workmanship, style and quality of the products, to be furnished in order that the Owner may determine if same are in compliance with the contract specifications. Any bidder may enclose such literature with his proposal if he so desires. Samples submitted by a successful bidder may be retained by the Owner until accompanied by detailed specification sheets.

1:13 Law Statement of Bids. Adherence to Law Section 103-a of the General Municipal Law, it is hereby provided that: ". . . upon refusal of a person, when called before a grand jury to testify concerning any transaction or contract had with the state, any political subdivision thereof, a public authority or with any public department, agency or official of the state or of any political sub-division thereof or any public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

a) such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or fire district, or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and to provide also that

b) any and all contracts made with any municipal corporation or any public department, agency or official thereof on or after the first day of July, nineteen hundred and fifty-nine or with any fire district or any agency or official thereof on or after the first day of September, nineteen hundred and sixty, by such person, and by any firm, partnership or corporation of which he is a member, partner, director or official may be cancelled or terminated by the municipal corporation or fire district without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the municipal corporation or fire district for goods delivered or work done prior to the cancellation or termination shall be paid."

1:14 Labor Laws. Minimum Wage Rates (Section 200 Articles 8 and 8a of the New York State Labor Laws).

No Contractor, Sub-contractor or any person acting on behalf of such Contractor or Sub-contractor shall, in the hiring of employees for the performance of work under this Contract or any Sub-contract hereunder, by reason of race, creed, color, or national origin, discrimated against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates.

Each Contractor and Sub-contractors performing work on this project shall take notice that all occupations employed directly on the site of the work shall be paid an hourly wage rate not less than the minimum rates as designated by the Industrial Commissioner of New York State Labor Department in accordance with all applicable provisions of the Labor Law of New York State.

It shall be the duty of the Contractor to furnish a list in detail for the various occupations involved and the minimum rates for wages as set forth by the Department of Labor, State of New York.

III. Form of Proposal

CITY SCHOOL DISTRICT
ITHACA, NEW YORK

Board of Education
Ithaca City School District
400 Lake Street
Ithaca, New York 14850

Pursuant to and in accordance with your advertisement dated 15 February 19__ and the Information to Bidders and Specifications relating thereto, the undersigned hereby offers to furnish in strict accordance with the Information to Bidders and applicable provisions of the specifications entitled "Audio-Visual and Other Instructional Equipment for the Ithaca School District, " for the sum or sums set forth below.

Undersigned further agrees to make good any damage incident to delivery.

Undersigned gives below his signature, the address to which such notice of acceptance or other official communication is to be sent.

This bid may be withdrawn at any time prior to the scheduled time for the opening of the bids or any authorized postponement thereof.

The undersigned certifies that pursuant to Section 103-paragraph D of the General Municipal Law that "a) the bid has been arrived at by the bidder independently and has been submitted without collusion with any other vendor of materials, supplies, or equipment of the type described in the invitation for bids, and b) the contents of the bid have not been communicated by the bidder, nor, to its best knowledge and belief, by any of its employees or agents, to any person not an employee or agent of the bidder or its surety on any bond furnished herewith prior to the official opening of the bid."

Bidder ________________
Address ________________
____
By ___________________
Dated _________________
Bid Security Amount $____

IV. BID SPECIFICATIONS 1967-68
(SAMPLES—NOT ALL ITEMS ARE LISTED)

Item No.		Quantity	Unit Price	Extension
1.	8mm. sound projector (Super) Model: Eastman Kodak Instamatic M100 Microphone included Sound: Magnetic Lens: 26mm., f/1.0 Speed: 18 to 24 frames per second Amplifier: 4 watts Weight: 35 lbs. Built in vw meter	2		
2.	3¼"x4" Slide Projector Model: Beseler *Slide King* No. 3610 with metal case and mechanical pointer 2-way slide carrier Blower cooled 750 watt lamp Lens: 6½" to 26"—coated—2⅝" diameter Weight: 24 lbs.	1		
3.	Opaque Projector Model: Beseler *VuLite III* No. 12300 Aperture: 10 x 10" Lamp: Blower cooled, 1000 watt Lens: 18", f/3.6 Weight: 33 lbs. Vacuum hold down, built in pointer, feed-o-matic copy belt 3 position power switch Attached power cord	3		
4.	16mm. Time and Motion Study Projector Bell and Howell model *173-EDA* Electric governor Speeds: 800 to 1500 frames per minute Handcrank single frame operation Forward and reverse Lamp: 750 watt	1		
5.	8mm. Silent Projector Technicolor model *500* Cartridge load Lamp: 150 watt, fan cooled Lens: 20mm., f16/16 Weight: 8 lbs.	10		

State Contracts

The Division of Educational Management Services is continually endeavoring to make materials, equipment, and supplies available under State contracts.

In the spring of 1963, Commissioner Allen appointed school district administrators and business administrators to serve on the Department's Continuing Purchasing Committee. The major purpose of this Committee was to "develop greater utilization of the facilities of the Office of General Services."

State contracts are bid and awarded under strictly competitive conditions. The majority of contracts contain the price extension clause under which they are available to political subdivisions, including school districts.

Educational Communications materials and equipment available under State contracts include:

16mm. motion picture projectors
Television receivers and stands
Electric lamps for projectors
School and art supplies
Sound recording tape and accessory items
Magnetic video tape and accessory items
Television tape recorder reproducers
Tape recorders
Overhead projectors
Radios (FM-AM)

Copies of these contracts may be secured upon request from the Division of Standards and Purchase, 103 Washington Avenue, Albany, New York 12224. Purchase orders should be sent directly to the contractors, referring to the appropriate State contract number. Please do not request copies of the contracts without first checking with the School District Business Manager in your school district.

Criteria for Selecting Equipment

It is the responsibility of the director of educational communications to determine the type and quantity of instructional equipment needed by a school district to conduct an effective program in educational communications. He should identify the needs of the schools after a careful inventory of what is available and what is desirable within the limits of the funds provided by the district or school. The director should seek the help of colleagues and experts when faced with problems requiring advanced technical knowledge. When considering large installations such as an electronic classroom or an independent study project using audio and video it is suggested that a committee formed by the school personnel who will be involved in the use of the installation visit similar projects in other school districts before making final decisions.

Technical Factors

There are many factors to be considered in the selection of equipment. Special attention should be given to:

Safety:
Heat
Shock
Moving parts
Exploding lamps
Insecure parts during operation
Sharp edges

Educational utilization
Bright picture
Clear sound
Pleasing to the eye
Projection of materials does not destroy the image

Simplicity of operation
Arrangement of controls
Accessible controls
Controls clearly marked with standard nomenclature
Ease of threading
Ease of positioning (elevation, tilt, focus, nonskid bottom)

Mechanical
Freedom from distracting noise
Freedom of readjustment during operation
Wiring quality
Wattage and screen illumination
Power requirements
Frequency response
Underwriters laboratory seals of approval
Serial and model numbers
Warranty and service provisions

Portability or mobility
Weight
Ease of carrying (bulky handles)

Ease of assembly and disassembly when necessary
Ease and provision for storage (arms on machine, power cord part of machine)
Easy carriage or wheeling by pupils

Ten Points to Consider in Purchasing Educational Equipment*

Richard B. Lewis, Professor of Education at San Jose State College, San Jose, California suggests the following points to be considered in purchasing educational equipment:

1. Determine what use the equipment will have in your curriculum—whether the equipment can be permanently installed or will be portable, and who will be expected to operate the units.
2. Fully examine and appraise the new equipment not only for operating ease, but also for durability, parts availability, and minor and major repair.
3. Don't purchase home-type equipment for use in schools. Select heavy-duty, long-lasting equipment that will take continuous use by different individuals.
4. Select equipment that has "equal" value components. All parts and components should have equivalent value and not just a few, with the balance weak or "just passable."
5. Purchase equipment from reliable firms who have been in business for a number of years and who will stand behind the units they sell you.
6. Don't purchase equipment on "special close-out sales" as these units have generally failed in one way or another.
7. Make certain the manufacturer has a good record for creating quality equipment, will be able to supply replacement parts, and is willing to help you solve any problems which come up.
8. Attempt to select equipment before building new classrooms and then see that the new rooms are planned to utilize the equipment best, be it built-in or portable.
9. Don't compare units on basic specifications alone. Consider important inside parts and components you can't see.
10. Don't purchase the least expensive unit for price reason alone. Often time more than the money you save in the initial stage will be lost in costly repairs.

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* From: Issue of "Educational Equipment and Materials." Winter. 1964.

Cataloging for Educational Communications

A very basic function of the director of educational communications is to provide the teachers and students with information on the materials and equipment available in the district and in the schools. Here again the size of the collection, the number of teachers to be served, and the distribution services must be considered in determining the type of catalog that will best fit the needs of the district. If the collection is located in a single school and the number of items and users is small, a simple card file or even a shelf list may fit the requirements of the situation.

The important facts to keep in mind when deciding on the best type of catalog for your district or school are:

- Teachers and students must be informed of the materials and equipment available to them and the procedures required to provide the materials at the right place and at the right time.
- The information concerning content must be given in sufficient detail so that the teacher can estimate the value of the item for the subject and grade level at which it will be used.
- Provision should be made to keep the information up to date.

List or Bound Catalog

A list or bound catalog is the most popular method of distributing information on educational communications materials. The chief advantage of this type of catalog is that it is available to every teacher in the school district, any time, any place. A variety of bindings may be used ranging from a stapled list to one having a professional book binding. Many school districts use a loose leaf type of binding so that new acquisitions may be added as they are received and processed for distribution. Catalogs may also be divided into smaller sections listing the materials by subject area and/or by grade level.

The list-type catalog can be duplicated by a variety of methods and at a considerably cheaper cost than the card catalog. Methods of duplication range from a liquid duplication process to a professionally printed book.

Preparing Catalog Information

In preparing a list-catalog, the director must keep in mind the number of different items that are to be included in the publication. The center that houses a variety of materials will require a more complicated method of giving the teacher the required information on each item but must provide a code for identifying the type of educational material. Most teachers and directors agree that a useful catalog should provide the following:

1. An introduction giving the rules and procedures that should be followed in order to receive maximum services
2. A title list of each type of material arranged in alphabetical order. This section provides technical information as to length, difficulty and grade level of each item as well as a short descriptive paragraph of content. In order to make it easier for teachers to locate materials a different color paper is sometimes used to identify the materials listed, white for films, pink for filmstrips and yellow for tapes. A tabbed divider is another method used to separate the different items listed in the catalog.
3. In the subject list, the individual items are indexed under the subject or subjects covering it. Each item should be coded as to type and listed under the major subject headings or topics selected.

Several school districts use the catalog as an instructional tool to train and inform teachers to use the instructional materials listed. A section describing good practices and suggestions for using educational materials can be added for each section. A newsletter type of service for keeping teachers informed about new materials and recent developments in the field can be printed in a format that may be added to the catalog.

Future Trends

As the size and scope of the materials collection increase, a bound catalog can become a very expensive item in the budget.

The problem of publishing a catalog should be discussed with the local printers, as they can frequently give you a better job at cheaper rates than doing the job yourself.

Directors of educational communications should follow closely the development of central processing services in his area. It is now possible to duplicate in catalog form information stored on standard file cards. The information is arranged in page format and photographed for offset printing.

Abbreviations commonly used in entries are:

ABBREVIATIONS		INTEREST LEVELS	
b & w	black and white	(p)	primary (K-3)
rev.	revised	(el)	elementary (4-6)
sd.	sound	(jh)	junior high (7-9)

si.	silent	(sh)	senior high (10-12)
min.	minutes (running time)	(c)	college
mm.	millimeter (width)	(ad)	adult
fr.	frames (filmstrips)		

Code designations used to identify the separate items are:

Numbers, MP — 16mm. films
F, FS — Filmstrips
FS, FSS — Filmstrips (sound)
FL — 8mm. film loops
S, SL — Slide sets
R, PR — Records
T, VTR — Tapes
TR — Transparencies
P, PIC — Still pictures
K, KIT — Curriculum kits
2"x2" — slide
3½"x4" — slide
r.p.m. — revolutions per minute (disk recordings)
i.p.s. — inches per second (tape recordings)

Samples of Educational Communications Catalogs Used in New York State

Example No. 1

Huntington Public Schools
Department of Audio Visual Services

INTRODUCTION

The book catalog of educational materials for the Huntington Public Schools utilizes different colored paper for each medium. The colors are explained in the table of contents.

TABLE OF CONTENTS

Introduction and information	white
Index	cherry
Films	salmon
Filmstrips	green
Film loops	canary
Tapes and filmstrips (sc series)	lilac
Tapes	beige
Projectuals and transparencies	blue
Kits	pink
Translifts	green

Method of Ordering

Instructional materials may be ordered from audiovisual services by telephone between 8 A.M. and 4:30 P.M. Orders received before 9 A.M. will be delivered by interoffice messenger the same day. If the material you order is already on loan, your name will be placed on a waiting list, and the materials will be sent to you when they become available. WE CANNOT AND DO NOT RESERVE MATERIALS. Each teacher should order for himself. Do not order through your building coordinator or have children place the order. Instructional materials are signed out to the requesting teacher who is responsible for them. Materials should not be held for more than 1 week. If there is a long waiting list for any particular piece of material, you will be requested to hold the material for only 3 days. Please try to cooperate with us, we are trying to give all the teachers in the district the best service we possibly can.

Films, translifts, and projectuals are ordered by title.

Filmstrips, tapes, film loops for 8mm. projectors and kits are ordered by the number appearing next to the title.

Art books, prints and slides will not be sent through interoffice mail, but must be collected from Audiovisual services by the teacher.

All films are inspected before being sent out. If a film becomes damaged while in use, please do not mend it with scotch tape or pins.

Listing in Catalog

FILMS

Adventures of a Chipmunk Family	EBF—11 min.
kg. prim.	color

Tells the story of a chipmunk family from early spring to the beginning of winter. Shows how the newborn babies are trained during the summer, and how the family prepares for winter by digging a burrow and storing food.

FILMSTRIPS

Africa—EL—JH

Geography of Land and People of Africa

Example No. 2

Ithaca Central Schools
Educational Communications Department

INTRODUCTION

The catalog has been bound in a three-ring binder so that it can be added to and revised with ease. Additional sections on such items as records and 2"x2" slides will be added in the near future. Each semester a list of revisions and additions will be published. These supplements should be placed in the binder as soon as they arrive so that they will not be lost.

An alphabetized listing of films located in the permanent film library is given. Information includes a brief description of the film, suggested grade levels, black and white or color, and running time.

MP — 16mm. films
FS — Filmstrips

FILM DESCRIPTIONS

A B C of Automobile Engine MP 309

13 min. gr. 7-12 col.

Animated film explaining in detail the parts and workings of the automobile engine. The three basic ingredients that make an engine operate—air, fuel, ignition, are personified as cartoon characters.

FILMSTRIPS

FS 455	*Abraham Lincoln*
FS 541	*Adding Fractions*
FS 800	*Adventures in Seeing*

Example No. 3
Yorktown BOCES
Introduction
How To Use This Catalog

The entries take the following form:

Title Catalog Number
Running time color or black and white producer
Description of film

The catalog number indicates grade level, subject area, and shelf designation. To help you use the information in the catalog the following index to codes is printed:

First Number Indicates Grade Level

1 Primary
2 Intermediate

3	Junior High School
4	Senior High School
5	Teacher Training
6	Adult

Second Two Numbers Indicate Subject Matter

01	Art
02	Business Education
03	Driver Education
04	Grammar
05	Literature
06	Foreign Languages
07	Guidance
08	Health & Safety
09	Home Economics
10	Industrial Arts
11	Mathematics
12	Music
13	Physical Education
14	Reading
15	General Science
16	Biology
17	Chemistry
18	Physics
19	Earth Science
20	Social Studies
21	Geography
22	Government
23	History
40	NASA Films
50	Teacher Aids
90	Miscellaneous

Catalog Information

About the Human Body (2 15 01)
15 min. color CHU

A boy's visit to a doctor's office for a physical examination is the occasion for a discussion of the more important body systems. Using animation, the film explores the function and uses of bones, ligaments and muscles. It shows the working of the nervous, respiratory, digestive, and circulatory systems.

Air and What it Does (1 15 01)
11 min. color EBF

The problem solving approach to a series of real life situations gives children an opportunity to discover basic concepts about air for themselves. Through demonstrations, children learn that though air cannot be seen, its many effects make known its properties and what it does: it takes up space, expands, contracts, has weight and force.

Card Catalogs

An advantage of the card catalog system is that revision or addition of new items does not require a complete revision. It is possible quickly to insert or delete changes as new items are added or old items are withdrawn.

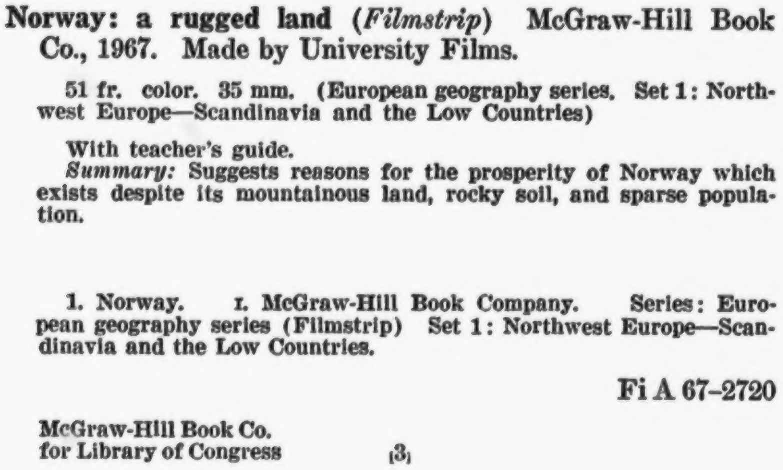
The disadvantages of this system are reflected in the cost of the original set of cards and in providing duplicate cards for each school. Some teachers also object to this type of listing because the card file is situated in a fixed location and cannot be circulated or moved. Information needed is not always available to the teacher who frequently must prepare lessons at home or at other locations in the school building.

Preprinted cards are furnished by some commercial companies for films, filmstrips and books. Cards for films, filmstrips and records are available from the Library of Congress. The Educational Film Library Association (EFLA) Film Evaluations supplies a card on the films they evaluate and Cardalog gives the necessary information required for educational recordings.

In cataloging nonprint materials it is not only necessary to identify the shelf location of the item, but the user should know the type of medium listed. Films, filmstrips, records, and other items require separate identifying numbers or code letters.

Different colored cards are frequently used to identify different types of media. Color coding may be done by using varicolored stock cards or cards that have narrow bands of color along the top edges.

An Example of a Library of Congress Card:



Norway: a rugged land (*Filmstrip*) McGraw-Hill Book Co., 1967. Made by University Films.

51 fr. color. 35 mm. (European geography series. Set 1: Northwest Europe—Scandinavia and the Low Countries)

With teacher's guide.
Summary: Suggests reasons for the prosperity of Norway which exists despite its mountainous land, rocky soil, and sparse population.

1. Norway. I. McGraw-Hill Book Company. Series: European geography series (Filmstrip) Set 1: Northwest Europe—Scandinavia and the Low Countries.

Fi A 67-2720

McGraw-Hill Book Co.
for Library of Congress ⌊3⌋

Ordering and Booking of Educational Communications Materials

The location of the materials collection, the number of locations to be served, and the geographic area to be covered are factors to be considered in determining the best way to service orders and to make deliveries to the schools. In some situations where a small collection is located in a school building, a simple card-loan system will do the job. In larger centers, a well organized system for processing orders must be used. The important fact to keep in mind is that the responsibility for this service must be assigned to the director or coordinator of educational communications. Materials and equipment are lost and misplaced when the honor system is used.

In addition to keeping a record of the location of materials, records can furnish a great deal of valuable information to curriculum planners and other school personnel responsible for the selection of materials and the planning of future programs.

Records can provide the following information:

- The number of items available for each subject area and grade level
- The number of times each item was used during the school year and by whom
- The number of materials that must be handled so that sufficient staff is available to process requests
- The items that should be withdrawn or replaced because they are not used
- The areas of the curriculum that require new or duplicate copies of educational materials

Example No. 1
A City School District

Schenectady Public Schools Audiovisual Department

There are 25 schools and over 12,000 students in the Schenectady Public School system. The Audio-Visual Department prints a master catalog every 3 years. In order to provide the teachers with information on recent developments in the field and additions or deletions of items listed in the catalog a monthly newsletter is published. Each September a cumulative supplement of these changes is available in the same format as the catalog.

SERVICES

The following types of audiovisual materials are available through the audiovisual department:

Filmstrips
Flat pictures
Microphones
Motion picture films
Phonograph records
Slides 2" x 2" Kodachrome
Tape recordings
Transcriptions
Single concept films

Delivery Service

1. Orders are delivered to the office of the principal or to a special room so designated by the principal. Each order is parceled and labeled when it leaves the Audiovisual Department. Check the contents on arrival and report immediately any error to the Audiovisual Department, 393-0919, as the route of the delivery truck is known and the error may be adjusted without much loss of time.
2. Return all materials except motion picture films to the principal's office or place designated at the close of school on each Thursday for pick up on Friday. Motion picture films should be in the principal's office on the date designated on the film. Do not plan to use materials, with the exception of motion picture films, on the date of delivery or the date of return. The driver making the deliveries must maintain his schedule and should not take the time to search a building for materials that should be in the principal's office or designated place. If more time is needed, call the Audiovisual Department for an extension. Do not ask the driver to book materials for you or to arrange for extensions of time.

Ordering

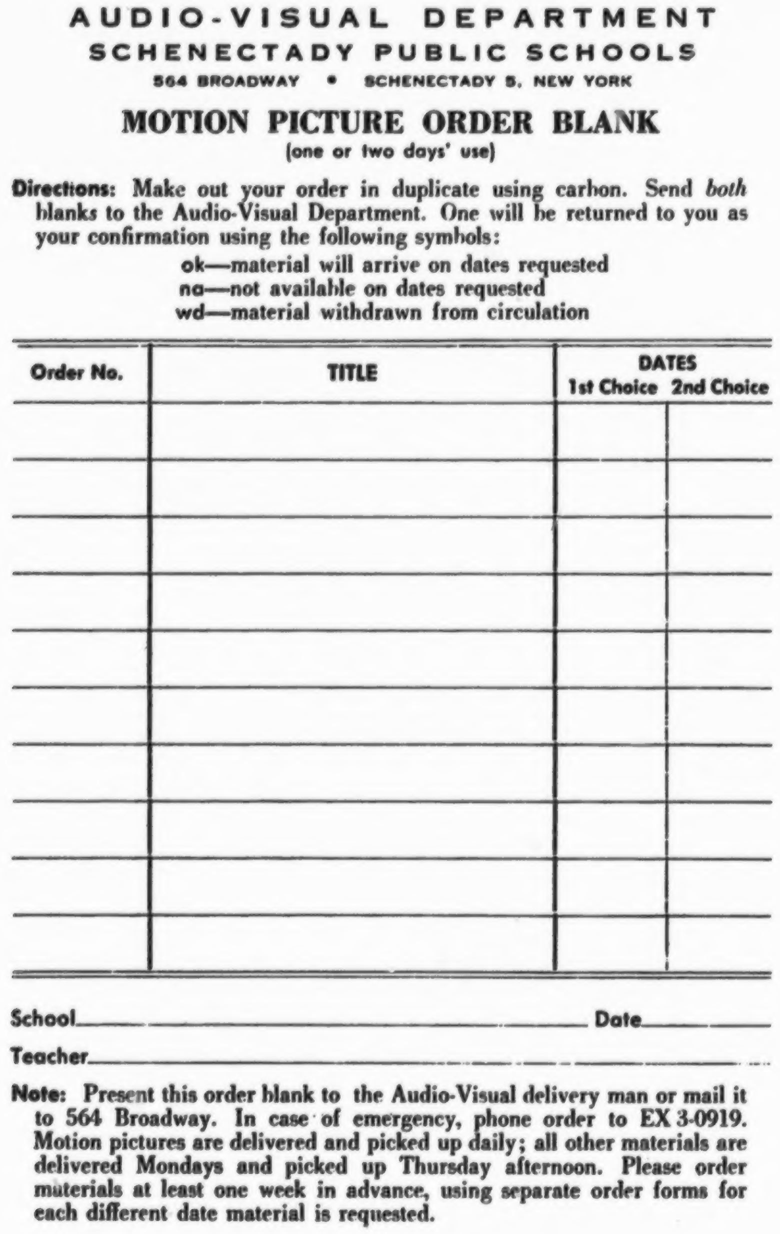
1. Indicate your selection of materials from this catalog by order number and title.
2. Place your order so it is in the hands of the Audiovisual Department at least 1 week ahead of the date on which you plan to use this material.
3. Delivery of all materials, except motion picture films, is made directly to the building on Mondays to be picked up on Fridays. Therefore, do not plan to use materials anytime Friday.
4. Fill out the appropriate order form supplied to each school and either mail it to this office or leave it for pickup by the delivery man.
5. Each type of material must be requested on a different type of order form, that is:

Filmstrips—green	1 week use
Records and transcriptions—blue	1 week use
Motion pictures—yellow	1 or 2 day use

Flat pictures—pink	2 week use
All slides—white	1 week use
Exhibits and kits—buff	2 week use

If materials requested are for *different* dates, be sure to fill out as many order forms as the number of different dates you wish materials. If you request more than one piece of the same type of material on the *same* date, one order blank will be sufficient.

6. Two copies of the order must be sent to the Audiovisual Department.



AUDIO-VISUAL DEPARTMENT
SCHENECTADY PUBLIC SCHOOLS
564 BROADWAY • SCHENECTADY 5, NEW YORK

MOTION PICTURE ORDER BLANK

(one or two days' use)

Directions: Make out your order in duplicate using carbon. Send *both* blanks to the Audio-Visual Department. One will be returned to you as your confirmation using the following symbols:

ok—material will arrive on dates requested
na—not available on dates requested
wd—material withdrawn from circulation

Order No.	TITLE	DATES 1st Choice	 2nd Choice

School____________________ Date________

Teacher____________________________

Note: Present this order blank to the Audio-Visual delivery man or mail it to 564 Broadway. In case of emergency, phone order to EX 3-0919. Motion pictures are delivered and picked up daily; all other materials are delivered Mondays and picked up Thursday afternoon. Please order materials at least one week in advance, using separate order forms for each different date material is requested.

Motion Pictures

1. Motion picture films listed in this catalog will be loaned on a 2 day basis if requested so that the film may be previewed and the lesson planned before classroom viewing.
2. Film deliveries are made to all schools daily.
3. Free films are ordered in the spring for the following year. Special lists and order cards are sent to each school for this purpose.
4. Special requests for all out-of-town motion picture films should be in the hands of the Audiovisual Department at least 1 month prior to the date of use.

   Please remember that your request for materials will be confirmed by the booking clerk either verbally or in writing stating that the materials you requested are or are not available for you on the date you requested. All requests have to be checked for availability against requests for the same materials by other teachers.

Equipment

Emergency Service

Each school has its own equipment. In an emergency, phone the Audiovisual Department, 393-0919, and make arrangements for borrowing service.

Sound motion picture projectors
2″x2″ Slide projectors
Filmstrip projectors
Opaque projectors
Microphones
Tape recorders
Transcription playback
8mm. technicolor projectors

Recommendations

It would be advisable for schools and PTA's buying audiovisual equipment to consult this department as to quality before making a final decision. Time and money can be saved if equipment is as uniform as possible.

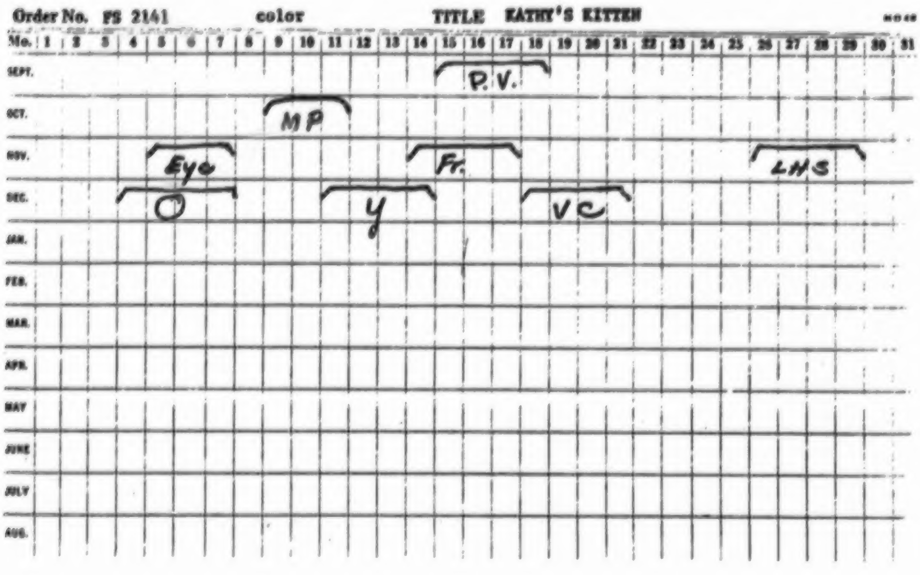
Suggestions

1. When ordering materials keep in mind preview time as well as class viewing time.
2. All materials, except 16mm. films, are delivered on Mondays and will be picked up on Fridays of each week. 16mm. films will be delivered and picked up daily. Exhibits and pictures are loaned on a 2 week basis.
3. Keep this office informed of the model, serial number, make and type of new equipment as it is acquired. All new equipment should be delivered from its source to the Audiovisual Department to be checked by our repairman. Inventory cards are made and necessary information is sent to the schools for recording on the school's inventory record. Please keep your inventory record up to date.

4. Only equipment recorded with the Audiovisual Department can be repaired by the Audiovisual repairman.
5. Do not tamper with broken equipment—call the Audiovisual Department immediately—Phone 393-0919.
6. Be sure to order spare bulbs for both filmstrip and movie projectors as soon as they burn out. Return all burned out projection lamps to the Audiovisual Department when seeking replacements. Always keep spare bulbs on hand.
7. All materials should be returned in their proper cover or album.
8. A filmstrip must not rest on the light housing. The intense heat warps the filmstrip resulting in permanent damage.
9. If a motion picture film breaks, please return all pieces to the Audiovisual Department. The pieces may be spliced to the film and returned to the company or you are charged for the missing footage.
10. Do not mend film with scotch tape, clips, pins, etc. Send it to the Audiovisual Department for splicing.
11. Before running the motion picture film please check the reel to see if it is bent. The reel is easily straightened thus preventing film damage.

Booking

Orders are received in duplicate. After the dates are checked and confirmed on a master card at the central office, one copy of the order is returned to the teacher. When the orders are processed at the Center, the dates and the location of the school are checked on the master card.



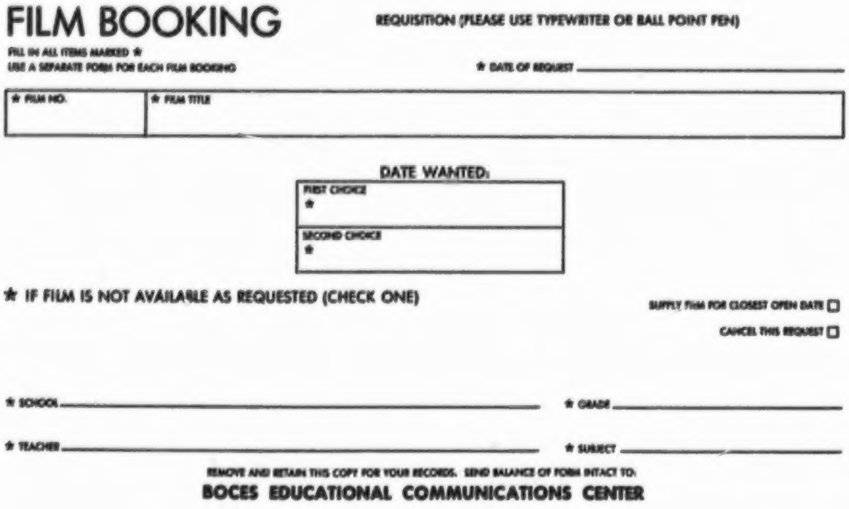
Order No. FS 2141 color TITLE KATHY'S KITTEN

Mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SEPT.															P.V.																
OCT.									MP																						
NOV.					Eye									Fr.												LHS					
DEC.			O							y							VC														
JAN.																															
FEB.																															
MAR.																															
APR.																															
MAY																															
JUNE																															
JULY																															
AUG.																															

Example No. 2
Tompkins-Seneca BOCES
Educational Communications Center

A commercial business form is used by centers for ordering films and other materials. The order forms have carbon inserted between each page, thus providing the required information for the teacher and the center. These forms are available locally from companies which design business forms and systems. These companies usually provide special consultants who will help you to design a form which meets the needs of the local center.

The Tompkins-Seneca Educational Communications Center uses a 4 by 7 inch snap-out-type of form consisting of four different colored sheets; green, white, pink, and yellow.



FILM BOOKING

REQUISITION (PLEASE USE TYPEWRITER OR BALL POINT PEN)

FILL IN ALL ITEMS MARKED ★
USE A SEPARATE FORM FOR EACH FILM BOOKING

★ DATE OF REQUEST ______________________

★ FILM NO.	★ FILM TITLE

DATE WANTED:

FIRST CHOICE ★
SECOND CHOICE ★

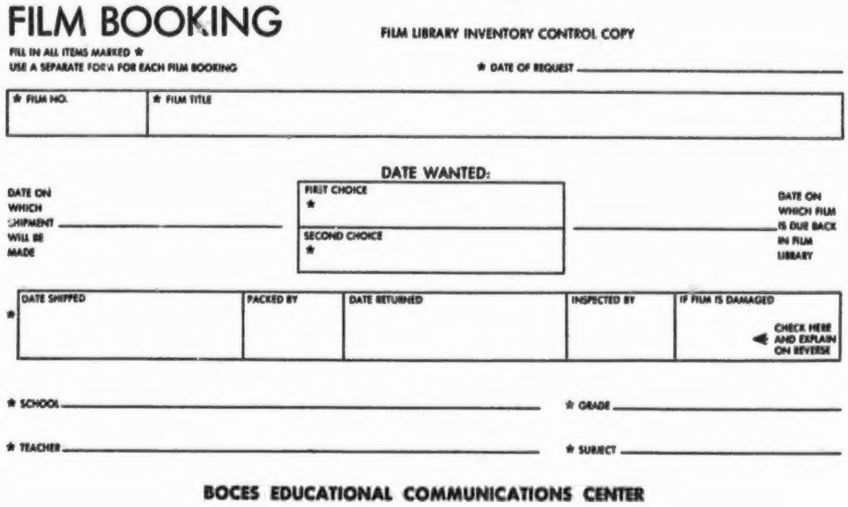
★ IF FILM IS NOT AVAILABLE AS REQUESTED (CHECK ONE)

SUPPLY FILM FOR CLOSEST OPEN DATE ☐
CANCEL THIS REQUEST ☐

★ SCHOOL ______________________ ★ GRADE ______________
★ TEACHER ______________________ ★ SUBJECT ______________

REMOVE AND RETAIN THIS COPY FOR YOUR RECORDS. SEND BALANCE OF FORM INTACT TO:
BOCES EDUCATIONAL COMMUNICATIONS CENTER

1. **GREEN.** The form is filled out by the teacher. The teacher then removes the top sheet (green) for a school record of the item ordered. The balance of the form is sent to the school coordinator, who checks the orders and then forwards them to the Center.



FILM BOOKING

FILM LIBRARY INVENTORY CONTROL COPY

FILL IN ALL ITEMS MARKED ★
USE A SEPARATE FORM FOR EACH FILM BOOKING

★ DATE OF REQUEST ____________

★ FILM NO.	★ FILM TITLE

DATE WANTED:

DATE ON WHICH SHIPMENT WILL BE MADE ____________

FIRST CHOICE ★

SECOND CHOICE ★

____________ DATE ON WHICH FILM IS DUE BACK IN FILM LIBRARY

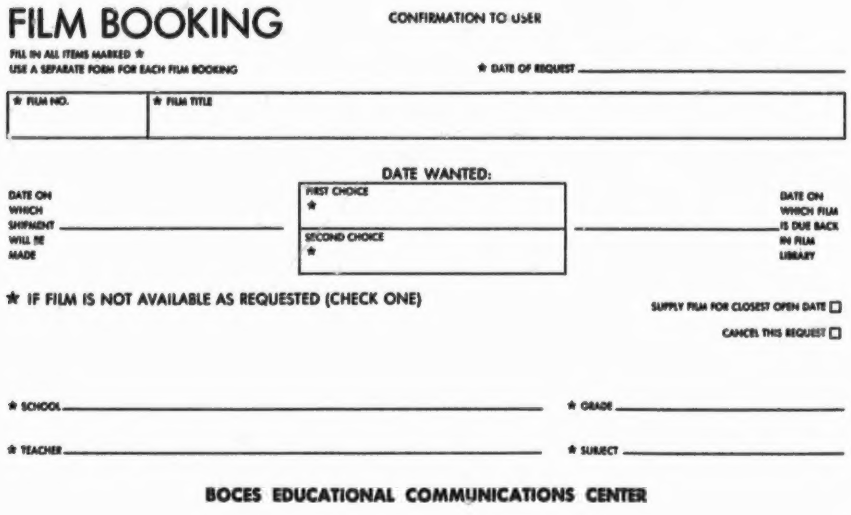
★ DATE SHIPPED	PACKED BY	DATE RETURNED	INSPECTED BY	IF FILM IS DAMAGED ◀ CHECK HERE AND EXPLAIN ON REVERSE

★ SCHOOL ____________ ★ GRADE ____________

★ TEACHER ____________ ★ SUBJECT ____________

BOCES EDUCATIONAL COMMUNICATIONS CENTER

2. WHITE. When the form is received at the Center, the dates for which the materials are requested are checked for availability. The clerk fills in the date on which shipment will be made and the date on which the film is due back. The additional information will be added on the day the order is filled. This copy is retained at the Center.



FILM BOOKING

CONFIRMATION TO USER

FILL IN ALL ITEMS MARKED ★
USE A SEPARATE FORM FOR EACH FILM BOOKING

★ DATE OF REQUEST ____________

★ FILM NO.	★ FILM TITLE

DATE WANTED:

DATE ON WHICH SHIPMENT WILL BE MADE ____________

FIRST CHOICE ★

SECOND CHOICE ★

____________ DATE ON WHICH FILM IS DUE BACK IN FILM LIBRARY

★ IF FILM IS NOT AVAILABLE AS REQUESTED (CHECK ONE)

SUPPLY FILM FOR CLOSEST OPEN DATE ☐

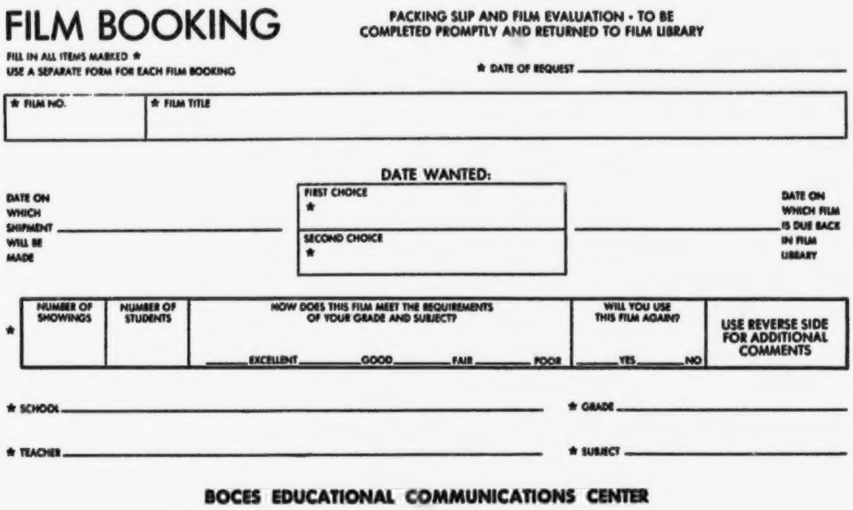
CANCEL THIS REQUEST ☐

★ SCHOOL ____________ ★ GRADE ____________

★ TEACHER ____________ ★ SUBJECT ____________

BOCES EDUCATIONAL COMMUNICATIONS CENTER

3. PINK. This confirming copy is returned to the teacher.



FILM BOOKING

PACKING SLIP AND FILM EVALUATION • TO BE COMPLETED PROMPTLY AND RETURNED TO FILM LIBRARY

FILL IN ALL ITEMS MARKED ★
USE A SEPARATE FORM FOR EACH FILM BOOKING

★ DATE OF REQUEST ____________

★ FILM NO.	★ FILM TITLE

DATE WANTED:
FIRST CHOICE ★
SECOND CHOICE ★

DATE ON WHICH SHIPMENT WILL BE MADE ____________

____________ DATE ON WHICH FILM IS DUE BACK IN FILM LIBRARY

	NUMBER OF SHOWINGS	NUMBER OF STUDENTS	HOW DOES THIS FILM MEET THE REQUIREMENTS OF YOUR GRADE AND SUBJECT?	WILL YOU USE THIS FILM AGAIN?	USE REVERSE SIDE FOR ADDITIONAL COMMENTS
★			____EXCELLENT ____GOOD ____FAIR ____POOR	____YES ____NO	

★ SCHOOL ____________ ★ GRADE ____________

★ TEACHER ____________ ★ SUBJECT ____________

BOCES EDUCATIONAL COMMUNICATIONS CENTER

4. YELLOW. After confirming the dates the white and yellow copy are filed by date for shipping. When the shipping date arrives the orders are removed from the file and the materials packaged for delivery to the schools. The yellow form is taped to the package. When the item is used, the teacher is asked to fill out the evaluation. The reverse side of the form can be used for additional comments by the teacher.

Inservice Training of Teachers

A major and continuing responsibility of the Educational Communications Director is to systematically provide an inservice program to assist teachers in selecting and using the instructional materials and equipment available in the school or district. Inservice training must be planned and executed at the local level since a training program must start at the stage of understanding of the teachers.

Such a program is planned to meet the needs of teachers at different levels. A workshop or inservice instructional program is planned for:

- the new or inexperienced teachers who need to be introduced to techniques, procedures, materials and equipment. They should know and understand the philosophy of the effective use of the tools of communications in the learning process.
- the experienced teachers of a school system who wish to be kept up to date on new developments in the field of educational communications

- the experienced teachers who are starting new programs, developing new materials or participating in research and experimentation

Types of Inservice Education

1. Special instruction may be given in the individual schools before, during or after school hours. It is sometimes possible to arrange programs so that teachers who require special help in the operation of equipment or in the preparation of materials can receive on-the-job training.
2. Schedule inservice classes for a planned number of weeks. Many school districts give inservice credit to teachers who successfully complete this type of class. (1 hour of credit requires at least 15 hours of instruction.)
3. Provide individual instruction to teachers who request assistance with new equipment or new programs.
4. Visit the classrooms to work with teachers to solve individual problems.
5. Arrange workshops and provide outside consultants and specialists to work with the teachers.
6. Plan a conference day before the school year begins or shortly after school opens to orient teachers to the materials and equipment available in the school district. New materials equipment and programs can be introduced and demonstrated.
7. Arrange with a college or university to give an extension course in the school district or in an area where it is possible for the teachers in your district to attend.

Outline for a Workshop in Educational Communications

Title
Location: Place, time, dates, hours
Credit: The number of credit hours allowed for the successful completion of the course
Instructor: A brief description of the educational background of the director and consultants responsible for the instruction
Introductory Statement: A descriptive statement of the purposes and goals of the workshop
Objectives: A list of the educational objectives to be covered in the course or workshop
Teaching Procedures Used
Textbook and Major Materials Used
Outline of Lessons: A brief outline of the work to be covered in each session. This outline could cover specific objectives, a list of materials used, suggested class activities and assignment for the next lesson.
Evaluation: A copy of the final test, examination or survey sheet to be used to evaluate the workshop.

Suggested Inservice Programs

1. Techniques in Educational Communications
   A course designed to be a basic introductory course. The chief aim is to develop understandings of media and their general applications to the teacher and the students.
2. Practicum in the Development of Instructional Materials
   A workshop planned for teachers who are interested in finding and developing new ways of expressing ideas and concepts. This class should lead the teachers into new techniques for presenting information and making instruction more effective through the planning and production of their own materials.
3. Organization and Curricular Integration of Educational Communications
   This course would be planned to cover the principles and practices in organizing, facilitating, and integrating the use of materials and equipment in newer types of school curricula and educational programs. Large group instruction, small groups and independent study demand the effective use of materials and equipment. The work would include defining the purposes of instruction, planning facilities, selecting and evaluating materials to meet the needs of the special program.
4. Methods and Techniques for the Teachers of Social Studies or Other Subject Area.
   This workshop would emphasize the "where to find" and "how to use" new and varied materials for the teachers of special subject area or grade levels.
5. Production of Educational Materials
   A course designed to explore some of the effective uses of various types of visual and auditory materials. Plan to cover basic techniques in lettering, display techniques and to develop materials for the opaque, the overhead and the tape recorder. This class could be extended to cover the production of slides, filmstrips and 8mm. films.
6. Communications and Education
   Communication and Education is a series of lectures by Professor Siepmann that show the revolutionary changes in education and demonstrate the use of instructional television in helping teachers. A series of 30 half hour programs on video tape is available from: The New York State Education Department, Educational Media-Materials, Distribution Service, Albany, New York 12224.
7. Educational Television for the Classroom Teacher
   A workshop in which teachers progress through all phases of developing a program idea, including a script, and teacher guide materials for programs they actually produce in the workshop. The fundamental philosophy of this workshop is

that in order to experience and understand the elements of utilization of a television program, a teacher must herself master the understanding of all the techniques which go into bringing that program to the classroom screen. It requires a basic television facility and must be limited to no more than 30 teachers (Required time 40 hrs).

Chapter IX

EVALUATION

A Brief Guide for Film Evaluators

What is an Evaluation?

Evaluation, as it is used here, means a critical appraisal by a committee, aimed at providing an estimate of the possible uses, audience, and quality of a film or filmstrip. It should be clearly distinguished from a review, which is a personal critical opinion. Reviews are easier to write, and frequently more entertaining to read, but the evaluator should guard against the temptation to let his personal prejudices for the film influence his balanced appraisal of *how* it can be used, *by whom,* and *for what purpose*. This means that the evaluator must have a clear idea of the various ways in which films can be used, and of the many kinds of audiences. He must also understand the film medium—what it can do and what it cannot do. Some films are unfairly condemned because they do not achieve the impossible. On the other hand, too often dull and mediocre films are accepted as "good," simply because they contain no obvious errors. An evaluation should appraise a film not only for its factual content, but also for its capacity to interest and stimulate its audience.

The Evaluation Committee

The Educational Communicator—He must know about film technique, enough to judge the message density and quality of the photography, sound, and editing. His knowledge of other films of the same type should help the committee in appraising the value of the film under discussion. The audiovisual specialist should also determine the degree to which the film medium is exploited.

The Subject Area Specialist—Often a different subject specialist is needed for each film, particularly in highly technical subjects like science. The specialist should be able to say whether the content is accurate and up to date; whether it is presented logically and correctly; and its importance in the subject field. Subject specialists can be teachers, supervisors, department heads, or experts from the community. Inviting someone to act as a subject specialist is a good way to get people outside the AV department interested in films.

The Utilization Specialist—Someone familiar with the audience who might use the film. A teacher or librarian, a minister, a community mental health worker, a Scout leader—anyone who can predict with some degree of accuracy what the audience reaction of a specific group would be. Would they find it dull, or exciting? Is it over their heads, or too simplified? Is it highly pertinent to their interests, or not worth spending much time on?

Particular attention should be given to the *Audience*. To say "high school students" is simply repetitive of the age level indication; and to say "science classes" repeats the subject area. Try to give one or more *specific* examples of possible audiences. Scouts—introductory nature study; PTA—discussion of school building program; drama students—study of Shakespearean period; beginning readers—stimulate story-telling. Some films can be used for two different purposes by two quite different audiences. This is valuable information, so be sure to include it.

In general, a film should be photographed, recorded, and organized so that it says clearly what it has to say. It is important to be able to recognize the difference between soft-focus and out-of-focus photography; between subtle script writing and fuzzy thinking.

Considerable attention should be given to the synopsis. What is called for here is not what the producer says the film is about—"A fascinating picture of the struggle between man and nature"—but a factual statement of what is in the film. The best way to take notes on the content is to jot down, during the screening, a key word or two for each sequence. (Sequences are usually marked by a full fade-out, with a fade-in on the next sequence.) After the film screening these notes can be expanded to a phrase or sentence for each sequence. Indicate the style of the film. Is it animated, dramatized, documentary, a compilation of stock footage, iconographic (using still pictures), or a combination? Is it narrated, with dialog, or with music and sound effects only? Don't worry if your synopsis runs a little long—the person who summarizes the evaluations can condense it if necessary

No opinion or critical comment should appear in the synopsis. Under Comments call attention to anything in the film which might cause trouble to the user, or which is of particular strength. Note any instances of prejudice or bias on the part of the filmmaker. (All filmmakers have their prejudices—just like all evaluators.) If it is a sponsored film, state whether it is overcommercial, or shows too much the heavy hand of the sponsor. *Always* put something in the Comments section

DON'T BE KIND—BE HONEST.

Project Aim—Film Evaluation

The New York State Education Department media evaluation project evaluates films in terms of their suitability for our State curricular needs. The films are evaluated as they are used in regular class sessions so that the effect on students can be observed in making judgments as to the value of the film.

A sample copy of the evaluation form used is printed below. The Bureau of Classroom Communications invites teachers to participate in this project and would appreciate copies of evaluations done in the schools. This form can be used to meet the requirements for evaluation imposed on schools using Federal or State funds to purchase instructional films.

A publication, *Teacher Evaluation of Classroom Films,* is available from the Bureau of Classroom Communications, State Education Department.

TO BE FILLED OUT BY TEACHER AND RETURNED WITH FILM

NYSED

This card must be filled out by the teacher during film showing so that films can be more closely correlated with the curriculum.

FILM TITLE________________________________

TEACHER EVALUATION

I used the film in grade_____Course__________________

Unit on__________________________

For this purpose (Curricular) **CIRCLE YOUR RESPONSES**

I will schedule for next year: Yes No

I would rate the film: A B C D F

Excellent Poor

Comments: ____________________________

____

(How used, Technical quality, Scheduling)

Signature________________________________

(Optional)

Evaluative Checklist

(An Instrument for Self-Evaluating an Educational Media Program in School Systems)*

INTRODUCTION

This evaluative checklist is based on the assumption that there are fundamental elements of an educational media program which will facilitate the improvement of instruction. The elements around which this checklist was developed were assumed to be common to most educational media programs. These include: 1) administrators and teachers are committed to the proper use of educational media for instructional purposes; 2) educational media are an integral part of curriculum and instruction; 3) an educational media center is accessible to the faculty; 4) the physical facilities are conducive to proper use of educational media; 5) the media program is adequately financed; and 6) the staff is adequate and qualified to provide for the educational needs of all faculty members.

The status of an educational media program is not likely to be known without periodic evaluation. The use of this checklist should greatly facilitate such an evaluation by providing useful guidelines for making judgments on program elements.

The term "educational media" as used in this instrument means all equipment and materials traditionally called "audiovisual materials" and all of the newer media such as television, overhead projectuals, and programed materials. Likewise, the terms "media" and "educational media" are used interchangeably to mean both instructional equipment and instructional materials.

Before completing the checklist, the evaluator may want to become familiar with the inventory of educational media and pertinent physical facilities of the program being evaluated. He may also want to study the criteria relating to the elements covered in the checklist.

EVALUATIVE CHECKLIST

DIRECTIONS

Mark *one* of the spaces at the left of the statement that most nearly represents the situation in your school system. If a statement accurately describes your school, mark the *middle space* to the left of that statement. If you feel that the situation at your school is below what is described, mark the *lower numbered space;* if above, mark the *higher numbered space.* In any case mark only *one* space.

---

* Prepared by W. R. Fulton. University of Oklahoma. Norman, Oklahoma.

EXAMPLE

[1] [2] [3] There is no full-time director of the media program.

[4] [5] [6] There is a full-time director in charge of the media program.

[7] [8] [9] There are a full-time director and a sufficient number of clerical and technical personnel.

I. SCHOOL SYSTEM EDUCATIONAL MEDIA SERVICES

CRITERIA

- A school system should have a program of educational media services administered through a school media center, and building centers if such are needed, which provides teachers with an adequate supply of appropriate instructional materials.
- The educational media center should be a separate service unit that operates at the same level as other major school services.
- A school system should have clearly defined policies, procedures, and plans for its educational media program, including short-range, and long-range goals.
- There should be a sufficient number of professional media staff members to administer the educational media program and to provide consultative services to teachers throughout the school system.

A. Commitment to the Media Program

[1] [2] [3] The school's educational media program consists of services from a media center managed by clerical and technical staff members. The services are not well coordinated and no one person has been given administrative responsibility for systemwide media activities.

[4] [5] [6] The school's educational media program consists of a media center with clerical and technical staff. The program is directed by a staff person who has some educational media training but not enough to qualify him as an educational media specialist. He reports to the administrative officer in charge of instruction.

[7] [8] [9] The school has an educational media program including an educational media center and necessary building media centers directed by an educational media specialist who reports directly to the administrative officer in charge of instruction. He is provided with facilities, finances, and staff essential in meeting the media needs of the instructional program.

B. Commitment to Educational Media as an Integral Part of Instruction

[1] [2] [3] The school provides some educational media and services for teachers who request them, but teachers are not particularly encouraged to use the services.

[4] [5] [6] A variety of educational media and services are generally available and some attempts are made to acquaint teachers with the services, and to encourage their use.

[7] [8] [9] The school provides the quantity and variety of educational media and services needed by all buildings and encourages teachers to use media as integral parts of instruction.

C. Commitment to Providing Educational Media Facilities

[1] [2] [3] Although some new and remodeled facilities provide for the use of some types of educational media, the school gives little attention to media utilization at the time buildings are planned.

[4] [5] [6] The school provides most new and remodeled buildings with light control and other facilities necessary for the use of some types of educational media.

[7] [8] [9] All new buildings are equipped for the greatest possible use of educational media and are designed to permit adaptation for new developments in media. Old buildings are being modified as fast as possible to provide for effective use of media.

D. Commitment to Financing the Educational Media Program

[1] [2] [3] Finances for the educational media program are inadequate to provide the services that teachers need and are prepared to use. There are no written policies relative to allocations, income sources and charges against the budget.

[4] [5] [6] Finances for the educational media program are sufficient to maintain the status quo, but the current media services are not sufficient to meet the instructional needs. Long-range curriculum plans do not include provisions for financing needed educational media services.

[7] [8] [9] The educational media program is financed entirely from regularly appropriated school funds. The budget reflects to some degree long-range educational media plans and includes provisions for special media for unusual curriculum problems. The budget is prepared, presented, and defended by the director of the media services in the same manner as that of any other budget unit.

E. Commitment to Staffing the Educational Media Program

[1] [2] [3] The responsibility for educational media services is assigned to various staff members whose primary commitments are in other school jobs.

[4] [5] [6] The responsibility for educational media services is delegated to a person who has had some training in educational media. He is provided with some clerical and

technical assistance.

[7] [8] [9] Leadership and consultative services are provided by an educational media specialist and a qualified professional staff. An adequate clerical and technical staff is also provided.

II. EDUCATIONAL MEDIA SERVICES—CURRICULUM AND INSTRUCTION

CRITERIA

- A school system should engage in a continuous evaluation of its educational media program as it relates to the instructional program.
- Continuous inservice education in the use of educational media should be carried on as a means of improving instruction.
- The faculty and the professional media staff should cooperate in planning and developing the parts of the instructional program that make provisions for the use of educational media.
- Professional educational media personnel should be readily available for consultation on all instructional problems where media are concerned.

A. Consultative Services in Educational Media Utilization

[1] [2] [3] Educational media personnel render consultative assistance in the instructional application of educational media when they are asked to do so and are free from other duties.

[4] [5] [6] Educational media personnel are usually available and are called on for consultative assistance in the use of educational media.

[7] [8] [9] Educational media professional personnel work, as a part of their regular assignments, with teachers in analyzing teaching needs and in designing, selecting, and using educational media to meet these needs.

B. Inservice Education in Educational Media Utilization

[1] [2] [3] Inservice education is left entirely to building instructional units and is limited to their own capabilities and such other resources as they can find.

[4] [5] [6] Professional educational media staff members are available on request to assist teachers and supervisors in inservice education activities relative to the use of educational media.

[7] [8] [9] Professional educational media staff members are involved in planning and conducting continuous inservice education activities concerned with the selection, development, production, and use of all types of educational media.

C. Faculty-Student Use of Educational Media

[1] [2] [3] Only a few teachers make any use of educational media in their classrooms. Students rarely use media in class presentations.

[4] [5] [6] Quite a few teachers make occasional use of educational media in their classrooms. Students occasionally use media in class presentations.

[7] [8] [9] Most teachers use appropriate educational media in their classrooms. Students use appropriate media for individual and group study, as well as for class presentations.

D. Involvement of the Media Staff in Planning

[1] [2] [3] The professional educational media staff is seldom involved with teachers in planning for the use of educational media.

[4] [5] [6] The professional educational media staff is occasionally involved with teachers and supervisors in planning and producing materials for use in the instructional program.

[7] [8] [9] The educational media specialist and his professional staff are usually involved with teachers, supervisors and other curriculum workers in planning for the use of and in experimenting with educational media in the instructional program. He is also regularly involved in decision making activities relating to the integration of educational media with the curriculum and instruction.

III. THE EDUCATIONAL MEDIA CENTER

CRITERIA

- Educational media centers should be organized around the concept of offering a wide variety of services and media to all instructional and administrative units of a school system, with leadership, consultative help, and other services provided by professional media specialists and other media center personnel.
- The instructional program should be supported by an adequate supply of educational media and a system of making them accessible to the faculty and students.
- The educational media center should provide such media services as procurement, maintenance, and production of appropriate educational media to support the instructional program.

A. Location and Accessibility of Educational Media

[1] [2] [3] The location of the school's educational media center is such that media are not accessible to most teachers. The school's educational media center is not supplemented by building centers where media are placed on long-term loan.

[4] [5] [6] The location of the school's educational media center is such that media are not very accessible to teachers. The school's educational media center is supplemented by a

few building centers that provide some media and services not available from the school media center, but merely duplicate others.

[7] [8] [9] The location of the school's educational media center and the presence of necessary building centers make media highly accessible to all instructional units. Both the school's and the buildings' educational media centers are adequately equipped to support a quality instructional program.

B. Dissemination of Media Information

[1] [2] [3] Information concerning educational media is seldom disseminated to prospective users, but there are no definite plans or channels for such dissemination.

[4] [5] [6] Information concerning educational media is disseminated to teachers and staff members on an occasional basis or when requested.

[7] [8] [9] Information concerning all educational media and programs is frequently disseminated to teachers and staff members as a matter of policy.

C. Availability of Educational Media

[1] [2] [3] The quantity of educational media is so limited that significant delays occur between requests for materials and their availability. Reservations must be made on a "first come, first served" basis, and the media must be picked up by the user.

[4] [5] [6] The quantity of educational media and the distribution system makes it possible for media to be delivered to teachers on relatively short notice.

[7] [8] [9] There is a sufficient quantity of educational media and an adequate distribution system to insure the delivery of all media to teachers on any day during the week in which they are requested.

D. Storage and Retrieval of Media

[1] [2] [3] Media storage facilities are available but are inadequate for some types of educational media, and personnel have difficulty in locating and retrieving specific items.

[4] [5] [6] The school's educational media center and all building centers have enough storage shelves and drawers for currently owned instructional materials. The retrieval system is adequate most of the time.

[7] [8] [9] Adequate storage space, including space for future expansion, is provided in the school's educational media center and in all building centers, with proper humidity control where needed. The school's educational media center has a master retrieval system for immediate location of all media.

E. Maintenance of Media

[1]]2[[3] Educational media are cleaned and repaired when

complaints regarding their operable condition are made by users.

[4] [5] [6] Educational media are cleaned and repaired whenever the maintenance Staff has time to do so.

[7] [8] [9] All educational media are inspected after each usage and are cleaned and repaired on a regular basis or when inspection indicates the need.

F. Production of Media

[1] [2] [3] Limited production facilities are available for teachers to produce their own materials.

[4] [5] [6] Educational media personnel, as well as teachers, produce some educational materials, but the media staff is limited to the extent that all demands for production cannot be met.

[7] [8[ ]9] Educational media personnel, as well as teachers, produce a variety of educational media not otherwise available, and meet most production demands for such media as films, filmstrips, slides, graphics, and recordings.

IV. PHYSICAL FACILITIES FOR EDUCATIONAL MEDIA

CRITERIA

- Each classroom should be designed for and provided with essential facilities for effective use of appropriate educational media of all kinds.
- Each classroom should be equipped with full light control, electrical outlets, forced ventilation, and educational media storage space.
- Classrooms should be equipped with permanently installed bulletin boards, chalkboards, projection screens, map rails, and storage facilities needed for the particular type of instruction conducted in each classroom.

A. Physical Facilities in Existing Classrooms

[1] [2] [3] A few classrooms have been modified for use of educational media. However, no systematic plans have been made to adapt all classrooms for the use of educational media, except that some departments have made such plans for their own classrooms.

[4] [5] [6] Some classrooms have been modified and equipped with such physical facilities as light control and electrical outlets and others are partially equipped. A plan for systematically equipping all classrooms is in operation.

[7] [8] [9] All classrooms have been modified and equipped for optimum use of all types of educational media.

B. Physical Facilities in New Classrooms

[1] [2] [3] Some new classrooms are provided with physical facilities such as light control and electrical outlets, but only in special cases are provisions made for the use of a wide variety of media.

[4] [5] [6] Most new classrooms are provided with physical facilities that make possible optimum use of educational media.

[7] [8] [9] All new classrooms are designed for and equipped with physical facilities that make possible optimum use of all types of educational media by faculty and students.

V. BUDGET AND FINANCE OF THE EDUCATIONAL MEDIA PROGRAM

CRITERION

Financing the educational media program should be based on both the school system's long-range goals and immediate educational needs. The budget should reflect a recognition of long-range goals, and be sufficient to support an adequate media program for optimum instructional improvement.

A. Reporting Financial Needs

[1]]2[[3] The financial needs of the educational media program are reported to the administrative officer in charge of instruction only when immediate expenditures are urgently needed.

[4] [5] [6] The financial needs of the educational media program are regularly reported to the administrative officer in charge of instruction.

[7] [8] [9] Regular reports reflecting the status and needs of the educational media program, including facts about inventory, facilities, level of utilization, and effectiveness of the media program, are made to the administrative officer in charge of instruction.

B. Basis for Budget Allocations

[1] [2] [3] The educational media budget is based on an arbitrary allotment of funds irrespective of need.

[4] [5] [6] The educational media budget is based almost entirely on immediate needs, though some consideration is given to long-range goals.

[7] [8] [9] The educational media budget is based on both the immediate needs and the long-range goals of the school and reflect clear-cut policies concerning allocations, income sources, and budget practices.

C. Development of Media Budget

[1] [2] [3] Each building instructional unit develops its own educational media budget without consulting an educational media specialist.

[4] [5] [6] The budget of the educational media program reflects the media needs of most building instructional units. However, some buildings have their own media budget which has no relationship to the educational media program.

[7] [8] [9] The budget of the educational media program reflects

the media needs of the entire school system and is developed by the professional media staff in consultation with financial officers, principals and other school administrators.

VI. EDUCATIONAL MEDIA STAFF

CRITERION

The educational media program should be directed by a well qualified full-time media specialist who is provided with sufficient professional, clerical, and technical staff to provide adequate media services to the entire school system.

A. School System Media Staff

[1] [2] [3] A staff person has been assigned to look after the media program. He performs more as a clerk and a technician than as a professional media person.

[4] [5] [6] A professional media person with some special training is in charge of the educational media program and has some professional, clerical, and technical assistance. He and his assistants are primarily oriented toward the mechanical and technical aspects of the program.

[7] [8] [9] The educational media program is directed by a well qualified media specialist who is provided with sufficient professional, clerical, and technical staff to provide adequate media services from the school media center. Professional media staff members are oriented toward curriculum and instruction.

B. Building Media Staff

[1] [2] [3] Some buildings have a teacher, a clerk, or someone else assigned to help obtain materials and care for equipment, but no released time is granted from other jobs to coordinate media activities in the building.

[4] [5] [6] Most buildings have a teacher, or a member of the professional staff assigned to coordinate media activities, but he has not been given sufficient released time from other school tasks, or enough clerical and technical assistance to permit him to render media services needed in the instructional program.

[7] [8] [9] A full-time professional educational media coordinator serves each building. Buildings that do not have sufficient teachers and media utilization to warrant a full-time coordinator share his services. He is provided sufficient clerical and technical assistance to supply all media services needed in the building. He reports to the school's educational media director and works closely with the media staff, supervisors, and other curriculum workers.

PROFILE SHEET

To develop a profile image of your program, transfer your mark from each item of the evaluative checklist to this sheet. Connect the marked squares by straight lines. Then turn the sheet to a horizontal position. This will pictorially demonstrate the "peaks" and "valleys" of attainment for your program.

			WEAK						STRONG	
Section I										
Item	A	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	B	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	C	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	D	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	E	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Section II										
Item	A	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	B	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	C	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	D	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Section III										
Item	A	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	B	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	C	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	D	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	E	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	F	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Section IV										
Item	A	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	B	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Section V										
Item	A	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	B	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	C	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
Section VI										
Item	A	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
	B	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]

Criteria Relating to an Educational Media Program*

I. SCHOOL SYSTEM EDUCATIONAL MEDIA SERVICES

A. Commitment to the Media Program

- A school system should have a program of media services administered through a school educational media center, and building centers if such are needed, which provide teachers with adequate supply of appropriate instructional materials.
- The educational media center should be an independent service unit that operates at the same level as other major school system services.
- A school system's educational media program should provide media and services compatible with modern-day instructional technology.
- A school system's educational media program should be directed toward the improvement of instruction in a modern educational program.
- The educational media program should occupy an important position in a school system's organizational plan.
- A school system's educational media functions and services should be coordinated under a single supervisory unit, generally called an Educational Communications Center.
- A school system should have clearly defined policies, procedures, and plans for its educational media program, including immediate short-range and long-range goals.
- A school system's administrative line and staff relationships should be such that teachers and media personnel have a sense of administrative support.
- School system lines of communications and responsibilities should be clearly established to define the relationship of the director of the educational media program to other staff members and to establish channels through which he should communicate in order to realize the objectives of the media program.
- School administrators should utilize the consultative assistance of National, State, county or local media specialists in evaluating the media program and in planning future action.
- Liaison should be maintained with State and National public institutions or agencies to make it possible for a school system to participate in cooperative projects that enrich or stimulate the local media program.

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* Prepared by W. R. Fulton. University of Oklahoma. Norman, Oklahoma.

B. Commitment to Educational Media as an Integral Part of Curriculum and Instruction

- The philosophy of an educational media program should be congruent with the philosophy and objectives of the school system in which it exists.
- A school system should engage in a continuous evaluation of its educational media program as it relates to the instructional program.
- A school system should provide sufficient leadership and technical assistance to insure that all faculty members have easy access to appropriate educational media for all learning situations.
- Adequate channels for disseminating information about educational media and their potentialities should be maintained throughout a school system.
- Teachers should be encouraged to experiment with educational media as a means of increasing instructional effectiveness.
- The educational media program in a comprehensive school system should provide media and services for a wide variety of curricula in the various specialized departments, technical courses, and special education curriculums of the school.
- Long-range school system goals should include the development and implementation of instructional systems involving automation approaches to the flow of information and ideas.

C. Commitment to Adequate Educational Media Facilities

- New buildings constructed by a school system should provide for the full use of all presently owned educational media and for the installation and use of new media as such are developed and made available.
- There should be a long-range systemwide plan which provides for the adaptation of old classrooms for effective use of educational media.
- An educational media center should be provided with adequate physical facilities for optimum service to a school system.
- Housing should be provided for the educational media services in which offices and work areas meet the normal standards of the school system for activities of a similar nature.

D. Commitment to Budgeting and Financing the Educational Media Program

- A school system's educational media program should be adequately financed through an independent budget.
- The budget of an educational media program should reflect the educational media requirements of the entire school system.
- The manner in which an educational media budget is administered should be determined by clear cut school system policies concerning allocations, income, and expenditures.
- The budget of an educational media program should be based on both the school system's long-range goals and its immediate educational needs.

- The budget of a school system's educational media program should be sufficient to support an adequate media program for optimum instructional improvement.

E. Commitment to Educational Media Staff

- There should be a sufficient number of professional media staff members to administer the educational media program and to provide consultative services to a school system's entire faculty.
- A school system should have a sufficient number of nonprofessional media staff members to relieve teachers and professional media staff of all routine clerical and technical tasks.
- A school system's educational media program should be directed by a person with a good educational background who has special preparation as an educational media specialist.

II. EDUCATIONAL MEDIA SERVICES—CURRICULUM AND INSTRUCTION

- The services and materials provided through an educational media center should be integral parts of curriculum and instruction.
- The use of educational media should be encouraged when such use contributes to the improvement of instruction.
- Teachers should be kept informed on new developments in materials, equipment, and the technology of instruction.
- Educational media personnel should participate in curriculum planning and development, and in the implementation of curriculum improvement, particularly as it relates to the integration of educational media into the total instructional process.
- The professional media staff should cooperate with teachers, supervisors, and other curriculum workers in planning and developing the parts of the instructional program that make provisions for the use of educational media.
- The director of an educational media program should participate in policymaking decisions relating to the use of educational media and with the help of well trained professional and technical assistants, provide consultative services to all instructional programs that make use of media.
- An educational media program should include a consultation function with professional media staff members competent to render advice to teachers, administrators, supervisors, and other curriculum workers in the selection, acquisition, preparation, production, utilization, and evaluation of educational media.
- Continuous inservice education in the use of educational media should be carried on as a means of improving instruction.
- Continuous inservice education should be carried on in such areas as the selection and use of materials, experimentation with the use of new instructional devices, materials and techniques, and the importance and value of educational media in instruction.
- If the inservice education activities for teachers, librarians and media personnel includes educational media workshops, institutes and conferences, the assistance of local, regional, and state

educational media specialists should be utilized in planning and conducting these activities.

- Professional educational media personnel should be readily available for consultation on research projects in which educational media are used.
- The administrator in charge of an educational media program should work in close cooperation with a faculty committee and/or an educational media evaluation team, in periodic evaluations of the media program.

III. THE EDUCATIONAL MEDIA CENTER

- An educational media center should be organized around the concept of offering a wide variety of services and media to all instructional and administrative units of the school system, with leadership, consultative help, and other services provided by professional media specialists and other media center personnel.
- An instructional program should be supported by an adequate supply of educational media and a system of making them accessible to teachers and students.
- The quantity and variety of educational media provided for the instructional program should be based on demonstrated need, availability, and utilization patterns.
- An educational media center should provide such media as projected materials, recorded materials, graphic materials, self-instruction materials, and television kinescopes or video tapes.
- An educational media center should provide such media services as procurement, maintenance, and production of appropriate educational media to support the instructional program.
- Services provided by the school's educational media center for building instructional units should include consultative services, acquisition of materials, storage of materials, circulation (pickup and delivery) of materials, maintenance and inspection of materials and equipment, and dissemination of information about educational media.
- In order to achieve a high level of utilization all educational media should be made highly accessible to each teacher, either by delivery from the school educational media center to the point of use, or by the establishment of building centers where frequently used media are placed on long-term loan.
- If a school system is large and complex, the school media center should be supplemented by building media centers. The services provided by the school media center should be comprehensive and its services should include all those which the building centers are not equipped to provide. Duplication of effort should be held to a minimum.
- All frequently used educational media should be automatically placed in building media centers on a long-term loan when the need is established.

- Frequently used low cost media such as filmstrips, slides, and certain recorded materials should be permanently located in buildings, departments, and in some cases in classrooms where they are used.
- Educational media available only from the school media center should be delivered to the school buildings where used at regularly scheduled intervals.
- The central classification and cataloging system should permit rapid location of media needed for specific teaching-learning situations.
- An educational media center should have facilities for producing such original materials as photographs, slides, filmstrips, overhead projection materials, drawings, illustrations, cartoons, charts, maps, graphs, display and exhibits, set and costume design, lettering, animation, models, and motion pictures.
- A production unit should have a minimum staff consisting of a director, secretary, photographer, and artist.
- There should be a central photographic production service available to all building instructional units which produces all kinds of still photographic materials.
- Unique materials needed for specific teaching and learning situations should be produced in the school educational media center. Such media include magnetic tapes, graphics of all kinds, mountings and display boards, photo copies, overhead transparencies, films, filmstrips, slides, study prints, laminations, specialized photographic materials such as time-lapse sequences and microphotography, and special visual materials for use by administrative officials.
- Graphic materials production facilities and services should be available in one location with subfacilities available in buildings where needed for the production of graphs, charts, animations, art work, transparency originals, silk-screen plates, teaching models, and scientific exhibits.
- If a school has need for complete recording and professional type high-speed re-recording, such facilities and equipment should be made available and provisions made for duplicating tapes for radio broadcasts and for learning centers and language laboratories.
- If a school has need for complete motion picture production services, there should be facilities for the production of black and white or color 16mm. motion picture films with optical sound, and/or 8mm. black and white or color films with magnetic sound, and a motion picture laboratory should be used for processing and printing black and white and color film.
- There should be centralized services for maintaining all educational media owned by the school system.
- Educational media should be cleaned and inspected after each use and in no case should media go for more than a year without

cleaning and inspection for evidence of damage or need for replacement.

- There should be a definite plan for replacement of worn out or obsolete equipment.
- Equipment selection and procurement should be based on recommendations of teachers, consultants, and maintenance personnel.
- All educational media should be examined and/or previewed before being purchased by the school.
- The quantity and types of educational media necessary for effective support of an instructional program should be determined by the level of utilization of the school's faculty.
- There should be a definite plan for evaluating and selecting new materials and equipment and for evaluating the effectiveness of presently owned items.
- There should be definite plans for involving teachers in continuous evaluations of the effectiveness of presently owned media.
- A school educational media center should maintain an up-to-date collection of catalogs, indexes, and other references for use in the selection and procurement of materials and equipment. This collection should include the *Media Index,* if this publication is not otherwise available to school media personnel.
- Each building educational media center should maintain an up-to-date file of community resources available to teachers in the building, and the school media center should maintain a master file of all community resources available to all teachers in the school system.

IV. PHYSICAL FACILITIES FOR EDUCATIONAL MEDIA

- Housing facilities for the school educational media center should be sufficient in size and arrangement to facilitate the efficiency and effectiveness of media services to all instructional functions. The facilities should provide for such specialized activities as storage, handling, maintenance, and circulation control of media, and for office space needed for media center personnel.
- Housing facilities for building educational media centers should be adequate in size and arrangement to make it possible for services needed from the building centers to be effectively provided. The facilities should provide for the storage of all media on long-term loan to the buildings, and for specialized activities such as handling, circulation, and production of media.
- Professional educational media personnel should be provided office space with sufficient privacy for consultations and conferences.
- The materials production services should be provided with space for the following work activities: (1) office, (2) conference room, (3) photographic studio, (4) at least one darkroom, and (5) a graphics studio.

- Adequate housing should be provided for such production activities as graphic production, sound recordings, still photography, motion picture photography, television, and radio.
- A school should have facilities for the production of graphic materials which include a studio, drawing tables, graphic and art equipment and supplies, a silk-screen production area, mechanical printing devices, and office space as required.
- A school that has a need for still photographic production and processing facilities should have darkrooms, printing and finishing room, storage space, copy room, and microfilm copy room.
- A school that has a need for its own film production facilities should have production stages with ceilings at least 16 feet high with lights, a shop for the production and storage of sets, sound recording rooms, an animation room, preview and conference rooms, and office space as required.
- A school that has a need for its own motion picture film processing facilities should have a processing laboratory, a printing room, a processing control room, a negative storage room with humidity control, and office space as required.
- An educational media center should have preview rooms where educational media can be examined and evaluated.
- An educational media specialist should be consulted about specifications relating to media when plans are made for the construction of new buildings and the remodeling of old ones.
- In order to avoid having to move classes to special rooms to make use of educational media, each classroom in all school buildings should be equipped with essential facilities for effective use of appropriate educational media, including telecasts, projected materials, recordings, and self-instruction devices.
- Every classroom should be equipped with full light control, electrical outlets, forced ventilation, and educational media storage space.
- Classrooms should be equipped with permanently installed bulletin boards, chalk boards, projection screens, map rails, and storage facilities needed for the particular type of instruction conducted in each room.

V. BUDGET AND FINANCE OF THE EDUCATIONAL MEDIA PROGRAM

- An educational media program should operate from a central budget which is prepared and defended by representatives of the educational media services.
- An educational media program should be financed entirely from regularly appropriated school funds.
- A school system should have clear-cut policies concerning allocation, income, and charges against the educational media budget.
- The budget of an educational media program should be based on both the school's long-range goals and immediate educational media needs.

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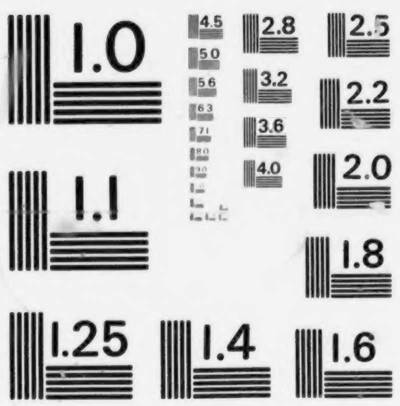
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- Long-range budget planning should provide for improvements to be made gradually until the full media program goals are realized.
- Long-range financial plans should include provisions for the expansion of media services as required by the improvement of quality and scope of the instructional program.
- The budget of an educational media program should provide for increased scope of services, expansion of services to meet increased enrollments, and the needs created by the addition of new structures.
- There should be a definite plan for gaining administrative and community support for the media program. The plan should include evaluation of the program, determination of media needs, long and short range planning, and presenting facts about media needs to administrators and governing boards.
- All costs relating to procurement or production of materials, purchase of equipment, and employment of staff for use in the school's educational program should be completely subsidized through a centralized budget.
- Teachers should be able to use educational media from the media center with no more restrictions than those imposed on the use of the book library or similar school services.
- The selection of all materials and equipment for purchase by the educational media center should be based on predetermined specifications formulated by the media staff.
- Provision should be made in the educational media budget for the systematic replacement of obsolete or worn-out media.

VI. EDUCATIONAL MEDIA STAFF

- Educational media personnel should work within the framework of job descriptions and policies relating to school media activities and these should be clear to the media administrator, his superior officer, and the entire media staff.
- The school's educational media center and building media centers should be staffed with professional, clerical, and technical personnel appropriately trained for the level of performance they are expected to render.
- Professional educational media personnel should possess a high degree of sensitivity to the potential of educational media for improving instruction and an awareness of new developments, new techniques, new equipment and new materials.
- The director of the educational media program should be well grounded in general education, and should have had practical experience in teaching. He should possess a doctor's degree or its equivalent, and should have had special training in such areas as the theory of education communication, curriculum and instructional methods, production of such materials as graphics and photography, programed learning, research methods, administration, and supervision.

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- The functions of the director of the educational media program should include: reporting the needs of the media program to the school administration, determining budget and financial needs, and providing consultative services to teachers, administrators, supervisors, and other staff members.
- The functions of the director of the educational media program should include the administration of the educational media center. In large school systems the coordination of the various functions of the educational media center should be delegated to an assistant director who approaches the broad educational requirements listed above for educational media directors.
- Specialists in the various media areas should be delegated supervisory responsibilities for the specialized functions of the educational media center. Such supervisors should report to the director or the assistant director, and should include specialists in television production, radio production, programed learning, media evaluation, selection and procurement, film librarians, and consultants skilled in assisting teachers in the instructional application of educational media.
- Professional educational media staff members should have advanced degrees with specialization in the media area in which they work.
- Professional educational media staff members should be active in professional organizations, particularly those representing the area of their specialization.
- The educational media program in each building should be implemented and coordinated by an educational media specialist specifically prepared for this activity.
- Large buildings should be provided with the full-time services of a professional educational media coordinator.
- Small buildings should share the services of a professional educational media coordinator. Each coordinator should be assigned to few enough buildings to allow him to effectively implement and coordinate the media program in each building.
- The educational media coordinator should be well grounded in general education, and should have had successful experience as a classroom teacher. He should possess a master's degree, or its equivalent, and should have had training in such areas as theory of educational communications, curriculum and instructional methods, production of such media as graphics, photographic materials, and recorded materials, programed learning, administration, and supervision.
- Coordinators assigned to buildings where educational television is used should have an understanding of educational television production, and should be well grounded in techniques of television utilization in classroom instruction.
- The functions of the educational media coordinator should include: reporting the media needs of the building to the school media director, assisting teachers in the selection and procure-

ment of materials, supervising all functions of the building media center, and providing consultative services to teachers, principals, supervisors, and other staff members assigned to the building.

- The nonprofessional educational media staff should consist of adequate numbers of clerical personnel, maintenance technicians, television technicians, distribution clerks, and production technicians.
- An educational media specialist should be able to delineate subject matter into teachable concepts, lead the faculty in cooperatively planning the curriculum, and organize a media center so that equipment and materials can be coordinated into the teaching program with dispatch. He should possess administrative ability to a high order, know, and be skilled in the use of, evaluation techniques, and be able to operate as a research specialist.
- An educational media specialist should have skill in the care and operation of all media devices so that he can ably train and supervise operators and maintenance personnel.
- An educational media specialist should be able to evaluate emerging innovations for possible introduction into instructional programs and should be able to interpret and promote those innovations that can make significant contributions to teaching and learning.
- In order to wisely select and supervise appropriate personnel, an educational media specialist should have a thorough understanding of such technical fields as television and radio production, photography, curriculum materials production.
- An educational media specialist should demonstrate a desire to improve his professional competence by attending local, state, and national educational media conferences, conventions, and workshops.

A GUIDE FOR THE REVIEW OF EDUCATIONAL COMMUNICATIONS

(Used by the Cooperative Review Service)

Write **S** for *Strong Aspects* or **N** for *Needs Improvement* on the line to the right of each item.

Administrative Procedures

1. There is a person responsible for the administration of the total educational communications program:
    - certified educational communications director .... ________
    - building coordinator .... ________
    - assistant principal .... ________
    - released time (teacher) .... ________

2. All facets of the instructional communications technology are viewed as parts of a comprehensive whole by administrative planning and organization .... __________
3. Quantitative Audiovisual Standards for personnel, materials and equipment adopted by the Division of Educational Communications of the State Education Department are being used as guidelines in your program .... __________
4. Instructional materials and equipment are located in classrooms or departments where they are most frequently used, or are nearby .... __________
5. Communications media and materials are made available to pupils and teachers as needed throughout the day __________
6. Lists and announcements of new materials, equipment, and general developments in the communications field are made available to the faculty through:
   - handbooks .... __________
   - catalogs .... __________
   - newsletters and/or bulletins .... __________
   - other (Specify) .... __________
7. Adequate professional books, magazines, pamphlets, and other materials for the communications program are provided for the faculty and pupils .... __________
8. All communications materials and equipment are inventoried periodically .... __________
9. The person in charge (or director) of the communications program, after consulting with members of the faculty, constructs a detailed budget for the program .. __________
10. Accurate and current records are kept showing funds available, disbursements, encumbrances, balances, and income .... __________
11. Ordering and scheduling rented or borrowed instructional materials (forms, regulations, etc.) are made easy for teachers .... __________
12. Materials can be obtained on short notice .... __________
13. Secretarial and clerical assistance is provided for the program .... __________
14. A budget item for communications equipment and materials is provided regularly .... __________

Comments:

Quality and Growth of Staff

1. Teachers know how to operate and effectively use the communications equipment made available by the school . . . . ________
2. Teachers employ good utilization practices:
    - Preview . . . . ________
    - Self-preparation . . . . ________
    - Preparing the class . . . . ________
    - Showing and using materials under optimum conditions . . . . ________
    - Followup activities . . . . ________
    - Evaluation of total experience . . . . ________
3. Teachers encourage individuals and small groups to use communications materials for study and research . . . . ________
4. Programs for inschool listening and/or viewing are used by teachers:
    - Educational radio . . . . ________
    - Educational television . . . . ________
5. Teachers use facilities for pupil self-instruction activities:
    - Electronic classrooms . . . . ________
    - Preview booths for educational communications materials . . . . ________
    - Microfilm readers . . . . ________
    - Other (Specify) . . . . ________
6. Faculty members visit other schools to observe production techniques and/or the effective use of instructional materials and methods . . . . ________
7. The communications staff actively supports professional organizations with membership and participation . . . . . ________
8. The staff encourages and engages in experimentation and publication relevant to the communications field . . . ________
9. An inservice program concerned with the educational communications field is provided . . . . ________

Comments:

Materials, Equipment, and Facilities

1. Communications materials and methods are an integral part of total instruction ______
2. Materials are of varied types ______
3. Materials are of sufficient quantity for effective use ______
4. Equipment is available in sufficient quantity to avoid inconvenience and delay in its use ______
5. The types of communications equipment are of sufficient variety ______
6. Equipment is of sufficient quantity so that its use is effective ______
7. Large group areas are equipped with a variety of communications media ______
8. Production facilities and equipment for constructing teacher-made curriculum materials are made available ______
9. A central public address system serving a variety of administrative and instructional purposes is provided ______

Selection

10. Teachers' committees assist in the selection of educational communications materials ______
11. A file of film, filmstrip, and television teaching guides is provided. ______
12. Equipment is selected on adequate technical and performance specifications ______
13. A clearinghouse of information is maintained, including an up-to-date file of community resources and films ______
14. Data is collected on the extent of use of materials of various types ______
15. Basic selection tools, such as brochures, bibliographies, and catalogs for specific subjects, are provided ______

Classifying, Cataloging, and Processing Materials

16. Communications materials of permanent value are classified and cataloged centrally regardless of where these materials are housed ______
17. The system of classifying, cataloging, and processing communications media and materials is adequate and efficient ______

Care and Maintenance of Materials and Equipment

18. Communications materials and equipment are periodically inspected and repaired ______
19. Records of the use of equipment are maintained ______
20. Records are maintained on the repair of instructional materials and equipment ______
21. Equipment is individually identified and numbered, and the serial numbers are recorded ______

22. Storage facilities are available to meet the special conditions (temperature and humidity, storage cases, cabinets, shelving, etc.) required by certain communications materials and equipment ....________

Comments:

Physical Facilities (Classrooms)

1. As an integral part of classroom construction provisions for physical facilities relating to educational communications include:
    - Acoustical treatment ....________
    - Electrical outlets ....________
    - Storage space ....________
    - Public address facilities ....________
    - Door sills flush with floor ....________
    - Sink with running water ....________
2. Light control is provided using drapes, shades, and/or full-closure blinds ....________
3. Classrooms have adequate ventilation or air conditioning ....________
4. Ample, well-lighted display surfaces (chalkboard, bulletin boards, peg boards, display case) are situated in each classroom ....________
5. Adequate provision for receiving radio and television in all classrooms includes jacks with conduit ....________
6. Adequate provision for large-group instruction with multi-media presentations ....________
7. Provisions for individual instruction at all teaching stations plus libraries or instructional materials centers ..________

Comments:

Physical Facilities (Auditorium)

1. As an integral part of auditorium construction, physical facilities relating to educational communications include:
    - Acoustical treatment . . . . ______
    - Storage space . . . . ______
    - Darkening and light control . . . . ______
    - Electrical outlets . . . . ______
    - Projection booth or island . . . . ______
    - Air conditioning . . . . ______
    - Stage lighting equipment and controls . . . . ______
    - Intercommunication between projection and stage areas . . . . ______
2. Seating capacity meets reasonable educational and community requirements . . . . ______
3. A screen whose size, material, and position are correct for the room is installed . . . . ______
4. There is sufficient depth to the auditorium stage for rear-screen projection . . . . ______
5. Control of auditorium lights and sound system is possible from the projection and stage areas . . . . ______
6. Speaker jacks in the projection area are connected to the auditorium and the school building's public address system . . . . ______
7. Special projection equipment appropriate for the auditorium is installed or is available for use . . . . ______
8. Adequate provisions for large group instruction with multi-media presentations . . . . ______
9. Facilities for receiving radio, television and VTR programs . . . . ______

Comments:

Summary

Use as many pages as needed to indicate:

1. Outstanding aspects, practices, and features of the program.
2. The areas of the program in which most improvement is needed.
3. What is being done to strengthen or improve the program.
4. Suggestions for further improvement of the program.

Chapter X

MEDIA FACILITIES

Facilities for the Classroom

GUIDELINES

Elementary

Light Control Every classroom should have adequate light control. Adequate means the availability of facilities to control light to the extent that all types of projected media can be utilized effectively.

	BASIC	ADVANCED
Projection Screens	One permanently mounted screen per classroom, 70 x 70 or larger with provision for eliminating keystoning. Large screen for auditorium or large group instructional area.	Additional portable screen of suitable size for individual and small group use.

Secondary

Light Control Every classroom should have adequate light control. Adequate implies the availability of facilities to control light to the extent that all types of projected media can be utilized effectively.

	BASIC	ADVANCED
Projection Screens	One permanently mounted screen per classroom. No smaller than 70 x 70 with keystone elimination. Screen for auditorium and/or large group instructional area.	One permanently mounted screen per classroom plus portable screens as needed. Permanent screen no smaller than 70 x 70 with keystone elimination. Screen for auditorium and/or large group instructional area.

Each classroom should:

1. have a light control device for room darkening such as opaque shades
2. have a secure storage area for safeguarding communications equipment
3. have electrical outlets in front and rear of room
4. have access to public address system
5. be equipped with a projection screen mounted in front of the room
6. have classroom windows easily adjusted for proper ventilation
7. have an area (corner) used by small groups of students for listening and viewing
8. have a display and bulletin board area
9. have on long term loan equipment items which are used frequently such as phonographs and filmstrip projectors
10. have materials available which are used frequently such as selected recordings, filmstrips, maps and globes
11. have access to radio via public address or portable equipment
12. have access to earphones and connection boxes for small group listening and viewing
13. have a picture file organized by subject areas
14. have materials available to make bulletin board or flannel board displays, set up an exhibit or prepare transparencies

Budget for Individual Classroom

In addition to a variety of books and other printed materials which would be provided for pupils, there should also be a collection of pictures, maps and globes, records, tapes, filmstrips, etc. The amount and distribution of materials is determined by the educational activities planned for the classroom.

A certain minimum inventory of educational equipment is required in a classroom. A suggested budget is as follows:

Item	Cost
Combination 2″x2″ and filmstrip projector, 300 watt	$ 45.00
Overhead projector	100.00
70″x70″ wall screen	30.00
Extension power cord, 20′, 3 wire	2.00
Record Player	60.00
Television receiver with table, 23″ screen, all channels (When TV programs are available)	215.00
Storage cabinets	50.00
TOTAL	$502.00

Educational Communications for the Classroom

An effective program of educational communications will have adequate resources and services at a district center, a building center, and at each teaching station. As the program develops and materials and equipment become more plentiful, the classroom becomes the important location for the utilization of materials. The entire program is based on the help and service that can be given to teachers and students. The teacher determines methods and techniques of teaching but frequently needs additional help in using the instructional materials and equipment available in our schools.

Inservice Training

To train teachers in the use of equipment and to keep them aware of new technology is not an easy task. A well planned program for continuous inservice training of teachers and students is required at the district level and at the building level. Such a program requires the cooperation of the director of educational communications, building director, principals and curriculum supervisors or directors.

Resources or information required by the teachers includes:

1. A catalog of all materials available in the school such as filmstrips, recordings and transparencies
2. A copy of a catalog listing materials, equipment and services available from the District Center
3. To know procedures for borrowing media, arranging trips, ordering films from the Center, getting classroom equipment repaired
4. Resource information when planning new units
5. Access to information concerning sources of free and inexpensive materials
6. Information concerning field trips within and outside the community
7. Information concerning resource people who might be called upon to enrich the curriculum

Technical skills needed include:

1. Skill in operating and using educational equipment and materials
2. Training as new media are received by the school
3. Ability to train students to use and operate classroom equipment for class use or for independent study
4. Skills in using a camera
5. Help in preparing classroom bulletin boards and charts using lettering aids

6. Help in making emergency repairs when film or tape breaks during classroom use

Services teachers need to know about include:

1. Equipment and materials available at specific times
2. Assistance in planning lessons using educational media
3. Access to rexograph (ditto) service
4. Access to mimeograph service
5. Access to thermographic service for transparency production
6. Access to publications such as "Grade Teacher," "Instructor," and "Audiovisual Instruction"
7. Service when working with a teaching team for large group instruction
8. Service when planning activities for small group instruction
9. Materials and methods when planning for nongraded independent pupil activities
10. Workshops, demonstrations, and inservice courses to provide new techniques, methods and skills

Teachers should have the following materials and equipment available:

1. Equipment that is safe and in optimum operating condition
2. Files of unit resources materials such as bulletins, realia, pictures, maps, etc.
3. Supplies such as clear acetate, nylon tip pens, inks, and pencils
4. Supplies and materials to make models, graphs, charts, and other items that are not produced by commercial companies

School Facilities

The use of more educational materials and equipment for instruction is expanding. For the efficient use of these materials and other modern instructional procedures advocated in our schools today, the classroom requires a great deal more adaptable floor space. In designing and building new schools, we should consider meeting the demands of the future as well as the requirements needed for present programs.

Changes in curriculum and new programs with greater emphasis on team teaching, large group-small group instruction and self directed learning require additional spaces. Such changes will require multipurpose classrooms, rooms suitable for small group instruction as well as the more traditional type of normal learning activities. Rooms able to accommodate up to one hundred fifty students for large group instruction and team teaching will be needed as will space for students and teachers to plan and study individually.

Facilities being planned to meet special programs require extensive planning with curriculum supervisors and teachers before meeting with the building planners. When the goals and purposes of the school program are spelled out in detail, then the architects can design a building to meet the needs of the school. It is recommended that school districts planning major changes in curriculum should start by selecting a committee of persons involved in making the decisions. This committee should visit several facilities where such programs are in operation before making the final decisions for the local school district.

Administrators should be aware of the fact that new programs not only mean a change in the facilities required but that frequently the teachers must acquire special competences. In programs using technology, teachers require additional knowledge in the sources and use of all types of educational materials and special skills in the operation of equipment. It has also been proved that there must be a sufficient quantity of the required types of materials and equipment if technology is to be effective in the learning process.

The recommendations which follow are for regular classrooms sufficient to accommodate students in groups of probably not more than 25 or 30. These rooms should be in addition to special purpose areas such as language laboratories, reading laboratories, large-group instruction rooms, or shops for special-skills development.

School districts planning facilities to meet requirements for special projects and programs using advanced technology should consult the publications listed in the bibliography on school facilities.

The recommendations which follow are for a self-contained classroom where teachers and students can use the educational materials and equipment available for use in the majority of the schools.

The Self-Contained Classroom

Space: The Department of Audiovisual Instruction of the National Education Association in its publication *Planning Schools for Use of Audiovisual Materials* recommends that:

For common present-day maximum class sizes (i.e. 30 students) an average of 40 square feet per pupil must be provided for:

- group work
- storage of materials for teacher and students
- study materials
- exhibit space
- oral reporting
- using materials and equipment

All walls should be as much as possible "instructional" walls, equipped and lighted for instructional purposes. This space should accommodate maps, charts, pictures, specimens, and other materials.

Auxiliary space of approximately 100 square feet immediately adjacent to the classroom should be set aside for the professional and counseling duties of the teacher. If jointly used by two teachers, there should be approximately 150 by 200 square feet of floor space.

Adequate storage space for collections of materials, such as, still pictures, charts, posters, transparencies, maps, records, filmstrips and tapes, are needed. Such facilities as the following should be considered:

1. File cabinets. Jumbo size file cabinets are needed for picture collections and transparencies.
2. Chart cabinets for storage of large charts and maps.
3. Cabinets with drawers of various sizes to hold miscellaneous supplies and materials.
4. Storage space in wall areas or movable cabinets for records, tapes, filmstrips as well as books, magazines and other items.
5. Storage facilities that can be locked should be provided for equipment and materials that are temporarily or permanently assigned to a room.
6. A work area in one corner of the room should be provided with at least two electrical outlets and a sink equipped with low pressure faucets. This area could be used for small group work or individual study.
7. Display facilities, such as chalkboards and tackboards, should be installed at pupil eye level and should be well lighted.

Lighting

Facilities should be provided for maintaining from 25 to 60 foot-candles of shadow-free, glare-free light from electrical sources to all reading and working areas to provide ratios of 1 to 3 foot lamberts for immediate tasks and 1 to 10 for general environment.

To meet both quantity and quality standards, building planners must supplement even the maximum natural sources with a consistent supply of light from electrical sources; and must provide wall, floor, and furniture surfaces which have proper reflection values.

Using educational materials in the classroom demands good natural light plus the degree of light control which permits efficient use of all types of projectors. Microprojection and the opaque projector require the highest degree of darkness.

Complete darkness in a classroom is not required. Except for special purposes there should be enough light for a student to write notes and participate in directed activities. Up to one foot candle can be directed downward on desks for note taking but this amount of light should not be permitted to fall on the screen.

In order to permit small-group projects and individual study it is recommended that at least four switches control the artificial light sources in the classroom, each regulating a corner (not linear) section of the room.

Light from corridors that comes into the classroom through door windows, open display areas and glassed areas between classroom and corridors also needs to be controllable.

Original cost of construction, cost of complete light control and maintenance cost should be compared with the cost of providing classroom light demands from electrical sources, and supply only enough window to be able to see outside. Windows should be located on one wall and should open out so that they do not interfere with blinds or drapes.

Light Control

It is necessary to have some means of controlling natural light. No system has yet been devised which permits satisfactory use of projected materials without light control facilities in addition to those which control sun and high sky glare.

The most common methods of light control of natural light sources are:

- Drapes of plastic or other noncombustible materials. Materials now come in various designs and colors which add to the attractiveness of the classroom. Drapes should have sufficient overlap and be long enough to prevent light from leaking into the room.
- Full closure Venetian blinds. There are special audiovisual Venetian blinds that lock when closed. With this type of darkening facility only one installation is required. Teachers can control the amount of light needed by adjusting the slats.
- Opaque roller shades. Light-diffusion shades are mounted inside casings. Darkening shades to exclude light are mounted outside casings or overlapped where possible. Opaque shades are mounted at the top of the windows, even if the window opens from the center in two sections.

Ventilation and Heating

Every classroom requires an adequate supply of clean, properly circulated air. There should be an individual temperature control for each room and the temperature automatically held constant. When summer school programs are planned for the school, the possibility of air conditioning should be investigated.

Wiring

Adequate power is required to operate projection and other equipment. A minimum of 12 duplex outlets should be included in every classroom, three in the front and three in the back of the room. Three duplex outlets will be needed on each side wall for group work and individual study. Light switches accessible to entrances and projection locations may require two sets of switches.

Additional wiring is required for intercom lines for audio programs. Cable for television and a master antenna system are necessary in schools planning to use broadcast radio and television programs.

Screens

Every classroom should have a permanently mounted screen. The building coordinator can assist the teacher in finding the best location for the projection screen. Screens are usually located in the front of the room so that the teacher can use the overhead projector. It is also possible to suspend the screen in a corner so that the teacher does not interfere with the projected image. The following facts will be valuable in selecting and installing screens:

1. A matte-white or lenticular screen will provide better viewing in a standard classroom.
2. A 70″x70″ screen is recommended for classrooms. Auditorium and lecture hall screens will need to be larger and should be electrically controlled.
3. The screen is hung on wall or ceiling brackets so that the lower edge is at the eye level of the students.
4. Use keystone brackets when installing permanent projection screens. Screens can then be tilted at an angle when using the overhead projector.
5. Portable screens should be available for other areas in the school where films and filmstrips are used.

Other Types of Learning Spaces

- **Learning Laboratory**
- **The Electronic Classroom**

Within the past few years the impact of new instructional methods and the development of media has caused significant changes in the curriculum. The rapid growth of these changes demand new facilities and a system that provides technical support to the teachers and learners in our schools. The classroom is no longer adequate to cope with the wide range of ability, the need for independent study, and the explosion of knowledge and materials in all areas. Consequently special learning spaces within the school should be planned to provide opportunities for independent learning and for small or large group instruction under professional guidance of the type which will minimize the inefficiency of unguided study, but which will still provide opportunities for experiencing discovery. These spaces should also contain instructional resources, including school personnel and materials which could not feasibly be found in a single classroom.

The emphasis in the learning spaces will be on learning rather than on instruction. As much as 40 percent of a pupil's time may be spent in these spaces while engaged in independent study. The amount of time which students spend in independent study or in small group situations varies with the maturity, motivation, needs and abilities of the individual pupil, the materials on hand, and the accessibility of the instructional materials and equipment.

Learning Laboratory

Independent Study
Reading Laboratory
Language Laboratory
Science

The Learning Laboratory provides a wide variety of materials utilizing several media for student use.

Learning laboratories can be of great value in developing selected pupil abilities. A multimedia approach to instruction will lead pupils to look at many sides of a question and to approach problems in a variety of ways. Such a discovery approach will stimulate a willingness to examine, to challenge, to evaluate facts, and to probe into original material for additional evidence. No longer will children be content to accept information because it is printed in a book. The multimedia approach, through its emphasis on individualization, will also provide time for the student to study at his own rate. He can pace his learning to best fit his individual need as well as having sufficient time to think about and digest the material he is using.

A learning laboratory can be set up to provide facilities for different types of learning. Such an installation usually provides for standard class instruction and small group or seminar discussions as well as for independent study.

The facilities of the learning laboratory would include the following spaces:

1. Office
2. Charging area
3. Classroom
4. Storage area (for materials in current use)
5. A viewing-listening center for previews
6. Conference room(s)
    - small group
    - teacher planning and study
7. Individual study carrels
8. Repair, service, and storage of equipment area

The rapid change in media and in organizational patterns of instruction emphasizes the need for flexible planning. With the increased development of large group instruction and team teaching more emphasis is placed on individual study. Some general recommendations for the type of construction required to meet the demands are:

1. Spaces should be designed to facilitate the use of all kinds of media. Even though the immediate plans do not call for using visuals as well as audio, planning for the facilities before construction can save funds at a later time.
2. Conduits or raceways to individual carrels should be installed so that they can be connected to a central information and retrieval system when it becomes available.
3. Use portable carrels so that spaces can be relocated as student movement patterns are formulated.
4. Carpeting, individual lighting of carrels, and effective use of color will help create a more desirable learning climate.
5. The acoustical and visual environment is an important factor in planning the learning center.

A completely modern and fully equipped independent study facility that includes viewing as well as listening and recording devices has been proposed by various authorities. Many installations of this type have appeared at all levels of instruction. This independent study space or carrel is equipped to use all kinds of materials—from print or projected materials to video image with sound. To make it fully effective and versatile the multimedia carrel may be linked with a central information "bank," which stores and on demand instantly supplies several kinds of printed, audio, and visual information.

The planning, design, installation, operation, and scheduling of special-laboratory facilities involves a mixture of administrative, technical, and instructional functions carried out by several people who are in varying lines of administrative authority.

In smaller schools and school systems, the chief administrative officer, the supervisor or department head of the subject area planning to use the facility, and the director of educational communications are all directly involved in the planning and installation of learning laboratories. Arrangements for technical operation and maintenance vary considerably. Some minor services are usually the responsibility of the Edcom department but most installations require the service provided by the manufacturer or the company that installed the equipment.

The Electronic Classroom
and
Language Laboratory

Definition

The electronic classroom is defined as an integrated group of electronic components installed in a learning space and designed to provide for and improve individual communication in that space. The language laboratory is the most common type of electronic classroom.

Planning Facilities

The electronic classroom has progressed from a rather primitive innovation to a widely accepted new teaching tool. The electronic classroom is particularly well suited for the teaching of foreign languages and has been found to be appropriate for a variety of other subjects as well.

The intelligent selection and installation of an electronic classroom is a tedious, time consuming, and costly matter for any school man. The teachers and staff require a great deal of instruction and training before making a decision to install and use the facilities of the electronic classroom.

Experience has shown that the installation of an electronic classroom does not automatically improve instruction. However, educators generally approve the use of electronic equipment in instruction when the following items are considered in planning:

1. The teachers who are to use the facilities should have instruction in the teaching techniques and methods necessary for use of the new facilities.
2. A training period should occur after the installation is made

in order to thoroughly acquaint the teachers with all the functions of an electronic classroom.

3. Materials such as: films, filmstrips, tapes and records should be readily available in the classroom and be of quality and in sufficient quantity to adequately facilitate instruction.
4. A systematic maintenance service should be provided to insure proper function of the equipment.

Electronic Classroom

The electronic classroom has many functions:

- It enables a teacher to supply a class with either live or recorded material on an individual basis.
- A single recorded example of any lesson can be used again and again with identical output each time.
- The electronic classroom provides each student with optimum conditions for hearing.
- It permits the use of a great variety of program material. With the electronic classroom, a great variety of instructors can be provided through the use of prerecorded programs.
- With the use of electronic classroom equipment, it becomes possible for students to record requested speech patterns for subsequent evaluation.
- Program material can be placed under student control. Students may proceed at varying rates of speed according to their individual learning rates.
- The teacher can monitor the progress of individual students without disturbing other students.

Purchasing an Electronic Classroom

The following suggested procedural guideline assumes that a decision to purchase an electronic classroom has been reached:

1. Initial meeting of faculty and administrative officials
2. Consultant assistance
3. Accumulation of vendor information
4. Visits to schools with EC facilities
5. Writing of specifications
6. Title III Office request for approval
7. Advertisement for bids
8. Bid opening
9. Award of contract
10. Installation
11. Inspection by a qualified technician
12. Faculty training period

Visual Equipment and Facilities for its Use

Every electronic classroom should have access to the following types of visual equipment and facilities:

1. Sixteen mm. motion picture projector
2. Two-by-two inch slide projector (capable of remote control: forward, reverse, and focus)
3. Ten-by-ten inch overhead projector
4. Permanently-mounted projection screen specially selected to meet the room configurations in which it is to be used
5. Adequate natural light control facilities

Graphics Center
Production of Instructional Materials

While wide selection and excellent quality of commercially available instructional materials has changed the basic role of local production, it is recognized that the lack of existing materials having local application is an ever increasing problem.

Locally developed or modified curriculum, large group instruction, individual or self instruction, electronic information retrieval systems, television, etc., all require a great deal of special materials that must be, for the most part, tailored to fit the specific situation. For this reason alone local production facilities are today as important as they were prior to the recent flood of commercially prepared materials.

The aggregate of local production activities, of course, will be dictated by the educational communications program it is to serve and the level in which it operates: single school district or regional program such as a BOCES Educational Communications Center. Certain functions requiring professional personnel and expensive equipment, should not for reasons of economy be implemented in the individual school or small district, but should be available on a regional basis. However, every school should have at least basic equipment for preparation of materials by school coordinator or teachers.

The recommendations below are guidelines only. Every situation has variables and must be handled individually as needs demand.

Elementary (building level)

Types of production

BASIC

- Original art work for various uses
- Overhead transparencies
- Mounting of pictures and other materials
- Flannel board materials
- Masters for spirit duplication
- Rapid process photographs

ADVANCED

- Add to basic list:
- Color slides
- 8mm. motion pictures
- Posters and signs (machine produced)
- Exhibit and diorama design and construction

Equipment

BASIC

- Thermo process transparency maker
- Photo copy transparency maker
- Dry mounting press & tacking iron
- Spirit duplicating equipment
- Primary typewriter
- Basic drawing equipment
- Large paper cutter
- Polaroid camera

ADVANCED

Add to basic list:

- Slide camera
  - 35mm., preferably a single lens reflex with automatic light meter
- Copy stand for above
- Super 8mm. movie camera with tripod & light-film splicer, etc.
- (Projector for above if not available in AV Center)
- Poster and sign lettering machine
- Large flat files for materials

Secondary (building level & small Central District)

Types of production

BASIC

Same as elementary plus:

- 8mm. motion pictures
- Posters & signs (machine made)
- 35mm. color slides
- Exhibits & dioramas

ADVANCED

Add to basic list:

- Diazo transparency production
- Electronic stencil cutting
- Mimeographed materials
- Color & black & white photography
- Slide duplication and filmstrip production
- 16mm. motion pictures
- Advanced art design and production

Equipment

BASIC

Same as elementary plus:

- 35mm. slide camera
- Copy stand
- Super 8mm. motion picture camera with accessories
- Drawing table and stool
- Light box
- Film splicing equipment 8-to-16mm.
- Film Rewinds
- Poster and sign lettering machine
- Large flat files and equipment cabinets as needed

ADVANCED

- Diazo transparency production equipment
- Slide reproducer
- Electronic stencil cutting machine
- Mimeograph
- 2¼x2¼ size professional camera (or larger) and equipped darkroom
- Photo-mechanical lettering
- 16mm. motion picture equipment
- Industrial copy camera or photo visualizer

Regional Center (or large district)

Production at the regional or large district center should incorporate all of the services previously listed, but with emphasis on large quantity production and/or duplication of instructional materials developed to meet regionally identified needs. Individual teacher requests should, whenever possible, be filled at the building level unless the central facility is the only available source of production.

At this level, it should be understood that professional personnel competent in graphic design and photography are required. Technicians or production aids will be required where a large volume of work is undertaken.

Equipment

Original Art Work

BASIC	ADVANCED
Drawing table (light table)	Airbrush equipment
Drawing equipment, lamps	Hot wax adhesive machine
Electric primary typewriter, carbon ribbon equipped	
Photo visualizer	
Large and small paper cutters	
Photo mechanical lettering machine	

Production

BASIC	ADVANCED
Commercial dry mounting press and taping iron	Carpenter's hand tools
Roll drymount tissue dispenser	⅜″ electric drill, sabre saw and accessories
Laminating equipment	7″ circular saw
Electronic stencil cutting machine	

Photographic Production

BASIC	ADVANCED
Professional 35mm single lens reflex camera w/accessories	Industrial copy camera
Macro (closeup) lens for above	16mm. motion picture equipment
Professional copy stand and copy lights	16mm. motion picture editing equipment
Light Meter	Super 8mm. sound record playback projector
Professional 2¼x2¼ or larger size camera for general photography	
Equipped darkroom	
Super 8mm. camera & accessories	

Duplication

- Thermo process office copier
- Photo copiers (wet and dry)
- Industrial Diazo exposing & developing unit
- Mimeograph
- Spirit duplicator
- Commercial sign-poster press
- Slide-filmstrip reproducer
- Photostat machine
- Offset plate making equipment
- Offset printing press

Chapter XI

MEDIA RESOURCES

Boards of Cooperative Educational Services

The school district affords the people of this state a direct way in which to express their ideas as to the function of education. The existence of a school district is dependent upon the interrelationship of population, taxable wealth, topography, and tradition. The result has been five basic types of school districts, ranging from the common school to the "big six" large city school district, each type attempting to meet the educational needs of its defined territory. Regardless of the type of school district each has to provide for educational services including educational communications.

Many of the relatively new services would be beneficial for school districts desiring to increase efficiency in certain areas of instruction but are prohibitive for every school district due to the amount of capital outlay. Fortunately, legislation has provided an administrative unit, based on supervisory district lines, to accommodate the sharing of school district resources. This administrative unit is known as a Board of Cooperative Educational Services. These boards permit most types of school districts to pool their resources and to acquire such services which individually they could not economically justify.

Predicated upon the initial responsibility of the individual school district to provide an intrinsically sound instructional program, the BOCES offer an excellent means through which school districts may improve the quality of education.

By 1963 many school districts were placing increasing reliance upon data processing to execute routine but essential administrative functions. Concurrently came the development of educational communications centers. Several BOCES began cooperative distribution of motion picture films owned by member districts.

SERVICES OF THE COMMUNICATIONS CENTER

There are many services in addition to the operation of a film library that a BOCES Communications center can provide. BOCES

Communications centers are now eligible for full reimbursement. In addition BOCES educational communications centers can receive NDEA Title III funds.

Some of these services are:

1. A graphic production center
2. Sharing an AV technician
3. Teacher inservice training center for the newer media
4. Cooperative purchase of new edcom equipment
5. Production of motion pictures and slides
6. Television Facilities

THE LEWIS COUNTY BOCES COMMUNICATIONS CENTER

Lewis County lies between Lake Ontario and the Adirondack Mountains, covering an area of 1,270 square miles. There are seven centralized school districts, which range in size from 540 to 2,200 pupils. Distances between schools vary from 4 miles to 60 miles. The seven school districts consist of a total of seventeen school buildings.

The Audiovisual Department became an active BOCES service in September 1960. Today 94 percent of the teachers are using the audiovisual materials from the centralized resource center. Also important is the controlled distribution, curriculum correlation and professional utilization of these materials.

Audio-Visual Service and Organization Chart

BOARD OF COOPERATIVE EDUCATIONAL SERVICES

Audio-Visual Department
Instructional Material Center
Audio-Visual Services

SCHOOLS OF LEWIS COUNTY

TEACHERS COORDINATORS ADMINISTRATORS

INFORMATION * ADVICE * INSTRUCTION * DEMONSTRATION

Visual Material	Audio-Visual Material	Equipment
Lettering	Films	Film projector
Posters	Tapes	Tape recorder
Diagrams	Filmstrips	F-S projector

Charts
Graphs
Maps
Flat pictures

Slides
Records
Transparencies
Field trips

Slide projector
Record players
Overhead
Opaque
Camera
Language Lab
Radio & TV

OBJECTIVES:

Effective Communication
Enriched Experiences
Improved Learning
Fig. 2

THE DUTIES OF THE EDUCATIONAL COMMUNICATIONS DIRECTOR

In General: (a) The ultimate objective is to improve instruction by providing instructional materials. This includes organization of an instructional materials center and a continuous evaluation of the program.

(b) meeting the daily problems relating to plans, budgets, material, equipment, facilities and routine management

PERSONNEL

1. *The Educational Communications Director* is responsible for organizing and developing all areas of educational communications both in the center and in the schools.
2. The duties of the *secretary* include assistance with the finance and invoice records, and booking distribution and confirmation records for the film library as well as general secretarial duties.
3. *The technician* does all equipment and material service, both at the *Center* and in the schools on a scheduled basis. He can also assist in the distribution of films.
4. *The School AV Coordinator* organizes the school communications center and develops a communications program for the school. They maintain constant liaison between school personnel and the center.

BUDGET

1. *Film Library Budget*—based on pupil school enrollment—$1.25 per pupil for the first 3 years.
2. *Supplemental Budget*—to be used for the purchase of filmstrips, study prints or any special AV material that would

be utilized more practically on a BOCES "shared distribution basis".

3. *Center Budget*—proposed annually by the director for all supplies, equipment, etc. needed to maintain the services of the center.
4. *School Budget*—for school equipment, services and supplies is proposed annually by the director and the school coordinator.
5. *Personnel*—Salaries proposed by the co-op board to the administrator of respective schools for approval. This may result in supplemental income, time allocation or whatever agreement is suitable to those involved.

The following is a list of BOCES that have developed communications centers

Norman Johnson
BOCES
Erie County No. 1
99-147 Aero Drive
Buffalo, N.Y.

Norman Stadler
BOCES
Erie County No. 2
3243 N. Boston Rd.
Eden, N.Y. 14057

Francis Tonello
BOCES
Chautauqua County
100 Central Ave.
Fredonia, N.Y.

William Farnsworth
BOCES
Allegany County
199 Stevens St.
Wellsville, N.Y.

James Cross
BOCES
Cattaraugus County
Delevan, N.Y.

Maurice Camp
BOCES
Clinton County
Chazy, N.Y.

John Fechter
BOCES
Suffolk County No. 2
292 Medford Avenue
Patchogue, N.Y.

Paul F. Dupuis
BOCES
Suffolk County No. 3
Deer Park Road
Box 338
Huntington, N.Y.

Herford Smith
BOCES
Rensselaer County
964 Hoosick Road
Troy, N.Y.

Robert Bogdanski
BOCES
Cortland County
31 N. Main Street
Homer, N.Y.

Kenneth F. Harris
BOCES
Monroe County No. 1
2596 Baird Road
Penfield, N.Y. 14526

Victor H. Blom
BOCES
Wyoming County
83 Main Street
Attica, N.Y.

John Button
BOCES
Herkimer County
101 Cemetery Street
Herkimer, N.Y.

George Heppe
BOCES
Oneida County No. 3
Box 498
Stittville, N.Y.

Frank Thomas
BOCES
Broome County No. 2
556 State Street
Binghamton, N.Y.

Burt Green
BOCES
Lewis County
Lyons Falls, N.Y.

Bruce Hoag
BOCES
Orange County
Warwick, N.Y.

Herman London
BOCES
Westchester County No. 1
845 Foxmeadow Road
Yorktown Heights, N.Y.

Carson Graves
BOCES
Westchester County No. 2
17 Berkley Drive
Port Chester, N.Y.

Richard Solomon
BOCES
Seneca-Tompkins County
Tompkins County Airport
Ithaca, N.Y.

Charles G. May
BOCES
Livingston County
Livonia, N.Y.

George M. VanKirk
BOCES
Chemung County
1120 Grand Central Avenue
Horseheads, N.Y.

John E. Loveless
BOCES
Ontario-Seneca County
3 Dewey Avenue
Clifton Springs, N.Y.

Michael Kaufman
BOCES
Ulster County
New Paltz, N.Y.

Edward Peterson
BOCES
Suffolk County No. 1
Riverhead, N.Y.

CUE

CUE (cultural understandings in education), a joint project of the (USOE) and the New York State Education Department, began in 13 New York State schools in October 1963. The program was aimed at integrating arts and humanities into the ongoing curriculum in the areas of English, social studies, science, home economics and industrial arts through the use of packages of newer media of all types. The media, which were related to the arts and humanities, and the guides assist teachers to use newer media to achieve a humanities focus within the regular curriculum. In addition to the packages of media, the CUE system involved the utilization of the exhibits of the various arts in the school, inschool performances of ballet, opera, and other performing arts, more extensive use of community cultural resources, including field trips, performers, speakers and other cultural resources. Part of the packages consisted of two television series, "Cultures and Continents," and "Indian Fables and Legends," which treat the cultures of non-Western areas through their arts.

The main aims of the program were to promote education for developing values, higher levels of cultural competence and better understandings of regular subject matter.

The program has become an ongoing project of New York State. Many more schools throughout the state have implemented the program or been inspired by it to create a similar program. The CUE publications are used by many teachers on an individual basis throughout the state and nation.

A do-it-yourself CUE guide was written to explain the rationale and operation of the project and to list all the materials used in it. It includes prices and sources so that any school can profit by the CUE research. Many librarians and writers of proposals use these lists. *CUE Insights* are small publications which assist the teacher to interrelate the arts with the ongoing curriculum.

Information about the CUE program and publications may be secured from the Division of Educational Communications. Although the guides were geared to the junior high school level, they have been found useful at many levels. Materials for the senior high school level have also been prepared. Demonstrations of the program entitled, *What is CUE* and *CUE in the Classroom* are available on video tape or film, as is consultation service.

Sources of Educational Communications Personnel

The Department of Audiovisual Instruction of the NEA operates a professional placement service. Information on available positions and personnel is circulated nationally every month except August in *Audiovisual Instruction* magazine. Correspondence should be directed to

DAVI
1201 16th Street N. W.
Washington, D. C. 20036

A clearinghouse of information on positions and applicants in New York State is maintained by the Division of Educational Communications, New York State Education Department. Announcements should be directed to:

The Bureau of Classroom Communications
The State Education Department, Albany, N.Y.
Telephone 518: 474-5825

A clear and concise description should be supplied for each opening. The following items should be included:

1. Title of position
2. Name and location of the institution
3. Date on which the position becomes available
4. Annual salary (range)—specify the total number of months in a working year
5. Responsibilities related to the position
6. Qualifications needed for the position
7. Name, title, address (and the telephone number) of the individual who will receive data on applicants

PROFESSIONAL PERSONNEL

Audiovisual leadership in local school districts and regional centers has traditionally been exerted by specialists with master's degrees. However, recent federal legislation which provides funds for new instructional media has resulted in a sharp increase in the number of audiovisual positions available at all levels of education. Attracted by greater prestige and higher salaries, many audiovisual specialists have taken positions with large universities, government agencies, and private organizations.

Colleges and universities with graduate programs in audiovisual education have not been able to meet the demand for personnel, although enrollments are increasing. Audiovisual programs with 1967–68 enrollments of 15 or more new master's degree candidates are listed on the next page, with names of the program directors.

1. California State College
   at Long Beach
   Long Beach, Calif. 90804
   Richard J. Johnson

2. San Jose State College
   San Jose, Calif. 95114
   Harold Hailer

3. University of Southern
   California
   Los Angeles, Calif. 90007
   Herbert R. Miller

4. University of Bridgeport
   Bridgeport, Conn. 06602
   David M. Silverstone

5. University of Connecticut
   Storrs, Conn. 06268
   Carlton W. H. Erickson

6. University of Florida
   Gainesville, Florida 36203
   Charles A. Cate

7. University of Hawaii
   Honolulu, Hawaii 96822
   Walter A. Wittich

8. Eastern Illinois University
   Charleston, Illinois 61920
   Verne Stockman

9. Southern Illinois University
   Carbondale, Illinois 62901
   Paul R. Wendt

10. Indiana University
    Bloomington, Indiana
    47405
    Mendel Sherman

11. Boston University
    Boston, Mass. 02215
    Gaylen B. Kelley

12. Michigan State University
    East Lansing, Mich. 48823
    Charles F. Schuller

13. Wayne State University
    Detroit, Mich. 48202
    John W. Childs

14. Western Michigan
    University
    Kalamazoo, Mich. 49001
    Daniel Moore

15. University of Minnesota
    Minneapolis, Minn. 55455
    Neville Pearson

16. New York University
    Washington Square
    New York, N.Y. 10003
    Irene F. Cypher

17. State University of
    New York at Buffalo
    Buffalo, N.Y. 14214
    Taher A. Razik

18. Syracuse University
    Syracuse, N.Y. 13210
    Donald P. Ely

19. Appalachian State Teachers
    College
    Boone, N.C. 28607
    John A. Pritchett, Jr.

20. North Carolina College
    at Durham
    Durham, N.C. 27707

21. East Texas State University
    Commerce, Texas 75428
    Beatrice Murphy

PARAPROFESSIONAL PERSONNEL

Recognition of the audiovisual field has led to an expansion of services and a funneling of professional staff members into positions at the administrative or supervisory level. Tasks which require special competency in photography, production of graphic materials, or equipment maintenance and operation are more frequently being delegated to paraprofessional personnel. Concentrated 1- and 2-year training programs for preparing individuals to perform these tasks have already been initiated by the institutions listed below.

1. Hayward Community College
   Hayward, Calif.
2. Mesa College
   Grand Junction, Colo.
3. Manchester Community College
   Manchester, Conn.
4. Oakland Community College
   Bloomfield Hills, Mich.
5. Portland Community College
   Portland, Oregon
6. Alfred Technical College
   Alfred, N. Y.
7. Dutchess County Community College
   Poughkeepsie, N. Y.
8. Farmingdale Community College
   Farmingdale, L. I. N. Y.
9. Monroe County Community College
   Rochester, N. Y.

Professional Organizations Concerned With Newer Media

The following organizations through their publications, services, and meetings are recommended as being helpful in planning for the newer educational media. Details concerning the organizations may be secured by writing directly to the office of the organization. Where no office is listed, it is suggested that you contact the president or the editor of their publication.

NYSAVA New York State Audiovisual Association

The purpose of the New York State Audiovisual Association, Inc. is to advance all aspects of education in New York State by furthering the effective selection, production, distribution, evaluation, administration, financing, and utilization of Audiovisual materials and equipment. The organization provides:

- Sources of practical current professional information, State and Federal
- Association with fellow professionals
- New product information
- Professional Advancement Information
- Sources of information for inservice education
- Participation in an outstanding Convocation program (considered one of the finest in the nation)
- Opportunity to participate in the growth and development of the New York State's educational communications program
- NYSAVA's Newsletter

New York State Audiovisual Association is an affiliate of the Department of Audiovisual Instruction and the New York State Teachers Association.

The local organizations affiliated with the New York State Audiovisual Association are:

- Metropolitan Audiovisual Association
- Long Island Educational Communications Council
- Suffolk County Educational Communications Council
- Westchester Audiovisual Association
- Central New York Association
- Southern Zone Audiovisual Association

DAVI Department of Audiovisual Instruction
National Education Association
1201 16th Street, N. W.
Washington, D. C. 20036

The Department of Audiovisual Instruction is one of several autonomous departments of the National Education Association of the United States.

Purposes (Article II, DAVI Constitution)

The general purpose of the Department of Audiovisual Instruction is the improvement of education through the effective use of audiovisual materials and methods. Specifically, the Department maintains and expands national efforts of audiovisual specialists and other instructional resource specialists who are professionally engaged in the planning, production, or utilization of audiovisual materials, plan and conduct long-range programs for the development and improvement of the audiovisual field and of related instructional procedures in general, and cooperate with other organizations and agencies whose interests and purposes are similar to those of the Department.

DAVI AND YOU

As a member of DAVI, you will have:

- Professional information, supplied frequently in many forms.
- Professional association and communication with thousands of others who, like you, are actively concerned with the improvement of instruction.
- Professional participation in committees and in state, regional and national meetings with many opportunities for personal growth.

- Professional consultation service with the DAVI national office serving as a clearing house.
- Professional placement service available at no charge.

DAVI Publications

In addition to its list of several dozen books, monographs, pamphlets and filmstrips, DAVI publishes two prize-winning magazines.

Audiovisual Instruction

All members receive this official DAVI magazine with late news of AV developments, reviews of teaching materials, equipment, and AV literature. Teachers, librarians, AV building coordinators and AV directors find in each issue something to pique their thinking. Here educational trends merge with technological developments in lucid, well written articles. It is a must for the AV worker and teacher's library in every school. It is included with a DAVI membership. Subscriptions are $6 per year.

AV Communication Review

Devoted to communications, technology, and the teaching-learning process, this scholarly journal has become required reading for research workers, theoreticians, graduate students, and thoughtful AV practitioners in all parts of the world. AVCR publishes abstracts of all research completed under Title VII of the National Defense Education Act. Other regular features include book reviews, and departments on programed instruction and research. Published four times a year, this journal is available to DAVI members at the special rate of $5 annually. Regular subscriptions are $6 per year.

Special Memberships

School or Library Service Plan is designed to make it possible for individual schools and libraries to share in all the advantages of individual membership in DAVI. This plan costs the same as an individual DAVI membership.

DAVI Business Memberships make it possible for commercial firms and their employees to participate actively in the program of the national professional organization of audiovisual educators. $35

A 1 year membership in DAVI, including a subscription to Audiovisual Instruction and AV Communication Review. $15

A membership in DAVI without a subscription to AV Communication Review. $10

National Audio Visual Association
Fairfax Circle
Box 337
Fairfax, Va. 22030

A trade association designed to promote better methods of distribution and use of audiovisual materials and equipment through such means as providing liaison between its members and the audiovisual field and fostering legislation favorable to improve educational use of audiovisual resources. Membership represents suppliers and distributors of audio-visual materials and equipment. Publications include NAVA *Membership List and Trade Directory* and NAVA *Audio Visual Equipment Directory.* The annual NAVA Convention and Trade Show includes concurrent meetings of several national audiovisual associations.

National Association of Educational Broadcasters
(NAEB)

President: William G. Harley
Vice President: Harold E. Hill
Executive Director, ETV Station: Chalmers Marquis
" " National Educational Radio: Jerrold Sandler
" " Instruction: Richard H. Bell

Various kinds of membership include educational institutions and individual members. Purpose is to promote the dissemination of information by and concerning radio and television for educational and cultural purposes. Official publications include NAEB Newsletter and NAEB Journal.

NAEB: Suite 119-21
1346 Connecticut Avenue, N.W.
Washington, D. C. 20036
202-667-6000

New York State Educational Radio and Television Association
(NYSERTA)

Officers in this association change annually. Information can be obtained from its newsletter editor:

NYSERTA: Director of Public Information
SUNY Educational Television Network
60 East 42 Street, Room 2332
New York, New York 10017
212-687-6681

Chapter XII

REFERENCES

PUBLICATIONS AVAILABLE FROM

The Division of Educational Communications
BUREAU OF CLASSROOM COMMUNICATIONS
The State Education Department
Albany, N. Y. 12224

1. Films for education
   A survey and plans for improved utilization of the educational film in the schools of New York State.
2. Cinelib catalog
   A list of free films available for teacher training for improved use of educational communications materials.
3. Selected reading on programed learning
   A bibliography
4. Lets learn about language labs
   A bibliography
5. Educational communications convocation proceedings. 1965.
   Reports on all phases of educational communications.
6. Teacher evaluation of new classroom films 1964-65.
   An evaluation of mathematics, foreign language and science films done by classroom teachers.
7. Tapes for teaching 1966-67.
   A list of instructional audio-tapes available through the Tapes for Teaching Service.
8. The electronic classroom: a guide for planning.
9. CUE humanities media guides.
   These guides provide media resources for the regular curriculum in the following subjects: home economics, industrial arts, social studies, English, and science. Also available is the do it yourself CUE guide—which explains the project and lists all materials. Quantity of all guides is limited. Please write letter if you wish to request these publications.
10. Educational communications reports
    A series of special newsletters released periodically.

Bureau of Mass Communications

1. Educational television
   A plan for statewide development in New York State.
2. Television facilities in higher education in New York State—survey 65.
3. Educational media-materials distribution service catalog. A listing of video taped programs and series available from New York State.
4. Once upon a day.
   A series of video taped television programs for children.
5. ETV in New York State
   Limited quantity reprint of article from *American School Boards Journal.*
6. Project 2500
   Filmstrip and audio tape 22 minute presentation. (To purchase make $10 check payable to Regents Fund.)

Selected Educational Communications Source and Reference List

The listing of references is necessarily a brief one. There are many additional publications which could have been included. The majority of sources listed are from the Bibliography compiled by the NEA Division of Educational Technology.

I. General References

Anderson, Charnel. History of instructional technology. I: Technology of American education, 1650–1900, Occasional Paper No. 1. Washington, D.C. NEA, Department of Audiovisual Instruction. 1962. 53 p. 25¢.

Order from Government Printing Office OE-34018

Brown, James W., Lewis, Richard B., & Harcleroad, Fred F. Audiovisual instruction. McGraw-Hill. 1964. 554 p. $7.95. manual, $3.50.

Practical information on the use of instructional materials to plan and carry out learning activities from kindergarten through college.

Cross, A. J. & Cypher, Irene F. Audiovisual education. New York: Thomas Y. Crowell. 1961. 550 p. $7.25.

College textbook illustrated with 300 halftones and 45 line drawings, including electronic teaching machines and teaching and learning laboratories sections.

Dale, Edgar. Audiovisual methods in teaching. R.ed. Holt, Rinehart & Winston. 1954. 534 p. $8.25.

A complete revision of the popular first edition of 1946, this work has become a standard in the educational field.

de Kieffer, Robert & Cochran, Lee W. Manual of audiovisual techniques. 2nd edition. Englewood Cliffs, N. J. Prentice-Hall. 1961. 254 p. $4.95.

Designed as a workbook, it takes the teacher through the gamut of audiovisual instruction.

Ely, Donald, *ed.* The changing role of the audiovisual process in education: definition and a glossary of related terms. Supplement No. 6. AV Communication Review 11: 1–148. Jan.-Feb. 1963. $3.50.

A clear statement of audiovisual relational is contained in this special publication. The definition section establishes a professional lexicon of significance.

Erickson, Carlton W. Fundamentals of teaching with audiovisual technology. Macmillan. 1965. 384 p. $7.50.

A book about instructional technology as applied professionally to the achievement of educational objectives.

Freedman, Florence B. & Berg, Esther L. Classroom teacher's guide to audiovisual material. Philadelphia. Chilton Co. 1961. 240 pp. $3.85.

A book written specifically for the teacher or inservice director who wants to learn how to enrich and enliven his teaching by the use of new methods and materials.

Kinder, James S. Audiovisual materials and techniques. 2nd ed. American Book, 1959. 592 p. $7.

A textbook for both undergraduates and graduate students in teacher education institutions, teachers inservice, and directors of AV programs.

Redding, M. Frank. Revolution in the textbook publishing industry. Technological Development Project No. 9. Washingtion, D.C. NEA, Department of Audiovisual Instruction. 1963. 32 p. $1.

This publication offers an excellent statement of the situation that exists in the textbook industry as a result of the technological revolution in education.

Scuorza, Herbert E. The practical audiovisual handbook for teachers. West Nyack, N.Y. Parker Publishing. 1967. $7.95.

Shores, Louis. Instructional materials, an introduction for teachers. N. Y.: Ronald Press. 1960. 408 p. $6.50.

Introductory textbook for prospective teachers enrolled in instructional materials courses and a guide for teachers in service.

Thomas, R. Murray & Swartout, Sherwin G. Integrated teaching materials. Longmans Green. 1960. 545 p. $6.75.

Illustrated text in the use of audiovisual materials, with particular emphasis on teachers creating their own materials.

Williams, Catherine M. Learning from pictures. Washington, D. C. NEA, Department of Audiovisual Instruction. 1963. 163 p. $4.50.

A guide and source book on the use of pictures.

Winston, Fred & Groisser, Philip L. Guilding students in the school AV club. Washington, D.C. NEA, Department of Audiovisual Instruction, 1962. 72 p. $1.50.

A guide for school building audiovisual coordinators in organizing and training students for participation in the school AV program.

Wittich, W. A. & Schuller, Charles F. Audiovisual materials. 4th ed. Harper & Brothers. 1967. 544 p.

A comprehensive, well illustrated college textbook covering the entire field of audiovisual instruction.

II. Administration

Brown, James W. & Norberg, Kenneth. Administering Educational Media. McGraw-Hill. 1965. 355 p.

Considers educational media administration in all its modern aspects and with regard for the complex problems involved in the rapid expansion of instructional technology.

Elias, Arthur W. *ed.* Technical Information Center Administration, Washington, D. C.: Spartan Books. 1964. 171 p. $6.75.

Presents the complete text of papers delivered at the Conference on Technical Information Center Administration on June 15–17, 1964, at Drexel Institute.

Erickson, Carlton W. H. Administering audiovisual services. Macmillan. 1959. 479 p. $7.50.

A textbook for graduate students who are preparing for leadership in the field of AV instructional materials.

Godfrey, Eleanor P. The state of audiovisual technology: 1961–1966. Washington, D. C. National Education Association, Dept. of Audiovisual Instruction. 1967. 217 p. $6.

The investigation looks at the resources available, the extent to which these resources were used, factors that encourage or inhibit use, and prospects for the future.

National Education Association, Dept. of Audiovisual Instruction, Washington, D. C. The cooperative approach to audiovisual programs. Washington, D. C. the Department. 1959. 80 p. $1.50.

Reports a survey of over 100 cooperative audiovisual education centers in the United States in terms of staff, budgets, and programs

National Education Association, Division of Audiovisual Instructional Service. The function of media in the public schools. Washington, D. C. the Division. 1962. 7 p. 10¢ each, 15 copies for $1.

III. Audiovisual Equipment

Eboch, Sidney C. Operating audiovisual equipment. San Francisco. Howard Chandler. 1960. 73 p. $1.75.

A manual for anyone planning to use projection or sound reproduction equipment in the classroom. It deals with the major technical features of equipment and illustrates operating principles.

Mannio, Philip. ABC's of audiovisual equipment and the school projectionist's manual. 2nd edition. State College, Pa. M.O. Publishers. 80 p. $1.25.

Oates, Stanton C. Audiovisual equipment self-instructional manual. Dubuque, Iowa. Wm. C. Brown Book Co. 1966. 155 p. $3.

A self instruction manual on how to operate various types of AV equipment.

Williams, B. P. *ed.* The audiovisual equipment director, Fairfax, Virginia. National Audiovisual Association. 1967. 350 p. $6.

Published annually with descriptions and specifications for most types and models of AV equipment manufactured in the United States.

IV. Graphics

Faris, Gene. Improving the learning environment: a study in the local preparation of visual instructional materials. Washington, D.C. Government Printing Office. 1963.

Frye, Roy A. Graphic tools for teachers. 3rd edition. Austin. E and I Printing Co. 1963. 105 pp.

This is a manual concerned with local production. It is designed to be used as a reference and a guide for individual teachers.

Haas, Kenneth B. & Packer, Harry O. Preparation and use of audiovisual aids. 3rd edition. Prentice-Hall. 1955.

Horn, George F. Bulletin boards. New York. Reinhold Publishing Corp. 1962. 72 pp. $6.50.

A well illustrated book on practical ways of constructing bulletin board displays.

———. How to prepare visual materials for school use. Boston. Davis Publications. 1963.

Kemp, Jerrold E. Planning and producing audiovisual materials. San Francisco. Chandler Publishing. 1963. 196 pp.

This book is planned for people who wish to explore and utilize audiovisual ways of expressing ideas, presenting information and making presentations.

Minor, Edward. Simplified techniques for preparing visual instructional materials. McGraw-Hill. 1962.

Morlan, John. Preparation of inexpensive teaching materials. San Francisco. Chandler Publishing Co. 1963.

Uhl, Ron. Overhead projector transparencies: how to make them. Washington, D.C. Visual Arts Press, 130 Q Street, NE. 1963. 48 pp. $1.

The goal of this book is to suggest and to give procedures for some of the most readily available and most effective methods of transparency production.

Williams, C. M. Learning from Pictures. Washington, D. C. Department of Audiovisual Instruction, NEA. 1963. 160 pp. $4.

Hundreds of suggestions for effective picture use at all grade levels in most subject areas, plus a listing of sources #071–02356.

V. Plant Design, Educational Communications Facilities

Audiovisual suggestions for school building planners: an administrator's check list. Dept. of Public Instruction. Harrisburg, Pennsylvania. 1962.

Bush, Robert N. & Dwight, W. Allen. A new design for high school education assuming a flexible schedule. McGraw-Hill. 1964.

de Bernardis, Amo, Doherty, V. W., Hummel, E. & Brubaker, C. W. Planning schools for new media. Portland, Oregon: Division of Education, Portland State College. 1961. 72 p. $1.00.

This reference guide presents essential information needed by laymen, school people, and architects for planning schools to utilize modern teaching technology.

Educational Facilities Laboratories, Inc. New spaces for learning: designing college facilities to utilize instructional aids and media.

New York. (477 Madison Ave.). 1961. 86 p.

The purpose of this report is to assist in developing optimum environments by defining the design criteria which will provide an atmosphere most conducive to learning.

———. Profiles of significant schools. New York. 1960. A series of reports on representative examples of recent and planned school buildings that embody unique and often experimental designs in an effort to adapt buildings to changing educational methods.

Green, Alan C. *ed.* Educational facilities with new media. Washington, D.C. NEA, Dept. of Audiovisual Instruction. 1966. 230 pp. $4.50.

Three reports recently completed by the staff of the Center for Architectural Research, School of Architecture, Rensselaer Polytechnic Institute. Of value to school administrators, architects, educational media specialists, and others concerned with plant design for instruction.

Hauf, Harold D. & others. New spaces for learning: Designing college facilities to utilize instructional aids and media. Troy, N. Y. Rensselaer Polytechnic Institute. 1961.

An illustrated report to assist in developing optimum environments by defining the design criteria which will provide an atmosphere most conducive to learning.

NEA, Department of Audiovisual Instruction. The new school. Audiovisual Instruction 7: 515–92. Oct. 1962. 50¢.

Boards of education, school superintendents, and administrators will find valuable information on planning schools for maximum flexibility and space utilization through new plant design.

———. Tremors in the ivory tower. Audiovisual Instruction 8: 202–82. April 1963. 75¢.

An issue that is devoted to reports from higher education.

———. Planning schools for use of audiovisual materials. Washington, D.C. the Department. No. 1 Classrooms. 3rd edition. 1953. 40 pp. $1.50. No. 3. The AV instructional materials center. 1954. 80 pp. $1. No. 4. Audiovisual centers in colleges and universities. 1959. 140 pp. $1.50.

These handbooks contain illustrated information on types of equipment and drawings of floor plans to assist in facility planning.

VI. Programed Instruction

Center for Programed Instruction. The use of programed instruction in U.S. schools. Washington, D. C. U.S. Office of Education. 1963. Publication No. OE 34022.

Coulson, John E. *ed.* Programmed learning and computer based instruction. N. Y. John Wiley and Sons. 1962.

Cram, David. Explaining "Teaching machines" and programming. Palo Alto, California. Fearon Publishers. 1961.

Deterline, William H. An introduction to programed instruction. Prentice-Hall. 1962.

Fry, Edward B. Teaching machines and programed instruction: an introduction. McGraw-Hill. 1963.

Lumsdaine, A. A. & Glaser, Robert. *eds.* Teaching machines and programmed learning: a source book. Washington, D. C. Dept. of Audiovisual Instruction, NEA. 1960.

Lysaught, Jerome P. A guide to programmed instruction. New York. John Wiley & Sons. 1963.

VII. Sources of Materials: Catalogs and Directories

Audio tape catalogue. 4th edition. Washington, D. C. Dept. of Audiovisual Instruction and National Association of Educational Broadcasters. 1967. 102 pp. $3.

A list of audio tapes available at a small charge from the National Tape Repository. Covers a wide range of subjects for every age level.

Bildersee, Max U. *ed.* Audiofile. Box 989, Larchmont, New York. $25 for 10 issues.

The only recordings appraisal and utilization service designed for school, college, university and library purposes. Printed on over 400 3 x 5 punched cards, ready for immediate use.

EFLA evaluations. Educational Film Library Association, 250 W. 57th St., New York, N. Y. 10022. Published monthly since 1948. Rates on request.

Continuing 3 x 5 card service. Describes, rates and suggests uses for films.

Educational film index. East Lansing, Michigan. Michigan State University or Ann Arbor, Michigan. The University of Michigan. 1967. $3.

A location tool designed to be used with the MSU/UM Film Catalog.

Educational media index. McGraw-Hill. 1964. 14 vol.

Education's most comprehensive, annotated listing of films, film-

strips, pictures, phonotapes and disks, slides, video tapes, kits, charts and programed materials.

Educational television motion pictures. NET Film Service. Bloomington, Ind. Indiana University. 1960. Free.

Contains series data, subject and use level index for 16mm. educational television programs.

Educators guide to free films. Randolph, Wisc. Educators Progress Service. Revised annually. $9.

Annotated list of sponsored materials for classroom use. Other titles in the series include: Educators guide to free curriculum materials. $7.50. Educators guide to social studies materials. $6.75. Educators guide to free science materials. $7.25. Educators guide to guidance materials. $6.50. Educators guide to free tapes, scripts and transcriptions. $5.75. Educators guide to free filmstrips. $6.00. Elementary teachers guide to free curriculum materials. $6.00.

Free and inexpensive learning materials. Nashville, Tenn. George Peabody College for Teachers. Annual. $1.50.

Index to 16mm. educational films. Los Angeles, California. National Information Center for Educational Media, University of Southern California. $25.00.

Instructional materials for teaching audiovisual courses, Syracuse University, Audiovisual Center, Box 87, University Station, Syracuse, N.Y. 13210. 60¢ plus postage.

An annotated list of motion pictures, kinescopes.

Instructional television materials: a guide to films, kinescopes, and videotapes available for televised use. 3rd ed. New York. National Instructional Television Library. 1964. Free.

An annotated list of selected courses.

Landers film reviews. Bertha Landers, *ed.* Los Angeles, California. Landers Associates. $27.50 annually.

Descriptive and evaluative annotations of current films on looseleaf sheets.

Library of Congress Catalog: motion pictures and filmstrips. Washington, D.C. Library of Congress. 1953—, $8 per year.

Published quarterly with annual and quinquennial cumulations.

Library of Congress Catalog: music and phonorecords. Washington, D.C. Library of Congress. 1953 —. $20.

Published semiannually with annual and quinquennial cumulations. $4.50 per year.

Recommended materials for a professional library in a school. Com-

mittee on professional materials. Ann Arbor, Michigan. Association of School Librarians. 1962.

Rufsvold, Margaret & Guss, Carolyn. Guides to newer educational media: films, filmstrips, phonorecords, radio, slides, and television. ALA. 1961. 74 pp. $1.50.

Handbook describing available catalogs, lists, services, professional organizations, journals, and periodicals which regularly provide information on newer educational media.

Salisbury, Gordon. Ed. Catalog of free teaching materials, Riverside, California: Rubidoux Printing Company. 1967. 236 p. $1.75.

A source list of instructional materials evaluated by accredited teachers.

Some sources of 2 x 2 color slides. Pamphlet no. S-2. Rochester, New York. Sales Service Division, Eastman Kodak Co. 1963. Free.

Source directory. 4th *ed.* Costa Mesa, California 92627. Technicolor, Commercial and Educational Division, 1300 Frawley Drive. 1967. 25¢.

Source list of educational, signal-concept movie loops in instant loading magi-cartridges.

Source directory, prepared transparencies. Rochester, N. Y. Graflex, Inc. 24 pp. $1.

Provides the names of major sources of overhead transparencies.

Sources of information on educational media. John A. Moldstad for the Educational Media Council in cooperation with the U. S. Dept. of Health, Education, and Welfare. Washington, D. C. Government Printing Office. 1963. 20¢.

U. S. Government films for public educational use. Seerley Reid, Katharine W. Clugsten, and Annie Rose Daugherty for the U. S. Department of Health, Education, and Welfare. Washington, D. C. Government Printing Office. 1961. $2.75.

VIII. Television

Campion, Lee E. & Kelley, Clarice Y. Studies in the growth of instructional technology. Washington, D. C. Dept. of Audiovisual Instruction, NEA. 1963. 152 p. $2.

A directory of closed-circuit installations in American education with a pattern of growth. Occasional Paper No. 10.

Cassirer, Henry. Television teaching today. New York. UNESCO, International Documents Service. 1960.

Cooper, Bernarr, *ed.* Instructional television fixed service: what it is

—how it works. Washington, D. C. Federal Comm. Commission. 1967. $1.

A booklet designed to help schools and administrators plan and utilize the Instructional Television Fixed Service, 2500 megahertz.

Educational Facilities Laboratories. Design for educational TV: planning for schools with television. New York. EFL. 477 Madison Avenue. 1960. 96 pp.

A report dealing with how to plan new schools or adapt existing schools for teaching by television.

Lewis, Philip. Educational television guidebook. McGraw-Hill. 1963.

Applying television equipment and techniques to the field of education.

Educational television: the next ten years. Stanford, California. The Institute for Communications Research. 1962.

Schramm, Wilbur. *ed.* The impact of educational television. Urbana. Illinois. University of Illinois Press. 1960. 247 pp. $5.

Selected studies from the research sponsored by the National Educational Television and Radio Center.

IX. Periodicals

AV Communications Review. Department of Audiovisual Instruction, Washington, D. C. quarterly, $6.

Reports significant research findings and abstracts on current developments in communication and audiovisual instruction.

Audiovisual Instruction. NEA, Department of Audiovisual Instruction, Washington, D. C. monthly except July and August. $4.

Educational Screen and AV Guide. Educational Screen, 415 N. Dearborn, Chicago, Ill. 60610. monthly $4.

Contains articles of interest to teachers, administrators, and audiovisual personnel.

Film News. Film News Co. 250 W. 57th St. N. Y. 10010. bimonthly. $4.

Journal of Broadcasting. Association for Professional Broadcasting Education. Washington 6, D. C. quarterly. $5.

Journal of NAEB. National Association of Educational Broadcasters, Urbana, Ill. bimonthly. $1.25.

National Society for Programmed Instruction. National Society for Programmed Instruction, Trinity University, 715 Stadium Dr., San Antonio, Texas 78212. monthly except June and August. $7.50.

The Newsletter. Bureau of Educational Research and Service, Ohio State University, Columbus. monthly except June, July, August, September.

Brings information to the teacher about the film, the press, and broadcasting.

X. Bibliographies on Educational Technology

The following bibliographies are available free of charge from:

Division of Educational Technology, NEA
1201 Sixteenth Street, N.W.
Washington, D. C. 20036

General References. Selected sources and evaluative list of audiovisual material.
A Bibliography of Single Concept Films
Selected Sources of Information on the Use of Simulation and Academic Games in Education.
Selected Installations and Sources of Information on Dial and Remote Access Systems.
Selected Sources: 16 mm Films & Filmstrips; Producers; 8 mm Films; Prepared Transparencies; Records & Prerecorded Tapes; Maps, Globes, Charts; Local Production Equipment and Materials.
Annotated Bibliography on Television in Education.
A Selective Bibliography for Audiovisual Teaching of Modern Foreign Languages.
A Bibliography on the Overhead Projector and Local Production.
Selected References on the Computer and Education.

Publications From NEA, Department of Audiovisual Instruction

To provide information is a prime responsibility of a professional organization. The Department of Audiovisual Instruction provides these publications to its members and to other educators who wish to be informed about the rapidly developing field of audiovisual technology in today's school.

Send request for publications to:

Publications Sales
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Washington, D. C. 20036

Bell, John and Byrnes, Francis C. *editors* Research, principles and practice in visual communications. 1960. 160 pp. $4. No. 071-02582.

A reprint of the original publication by the National Project in Agricultural Communications.

Glaser, Robert. Teaching machines and programed learning, 11: data and directions. 1965. 831 pp. $11.50. No. 071-02390

Based on a Carnegie-sponsored research symposium, this comprehensive work includes 17 chapters of detailed and thoughtful assessment by today's leading scientists and practitioners.

Godfrey, Eleanor P. The state of audiovisual technology: 1961–1966. $6. No. 071-02972

This monograph includes two studies of the amount, availability, and use of audiovisual equipment and materials in public elementary and secondary schools done by the Bureau of Social Science Research, Inc.

Hocking, Elton. Language laboratory and language learning. Monograph No. 2 2nd edition. 1967. 221 pp. $4.50. No. 071-02642

This well-known, nontechnical discussion in depth of the language laboratory as an instructional device now features a completely new selected bibliography of 230 references. The second edition also features a descriptive listing of language tests, materials centers, and motion pictures relating to language teaching methodology.

Lumsdaine, A. A. & Glaser, Robert. *editors.* Teaching machines and programmed instruction: a source book. 1960. 724 pp. $7.50. No. 071-02320

A collection of the 47 "classic" papers upon which this field is based, plus research and a 28-page bibliography.

Recommendations for reporting the effectiveness of programed instructional materials. 1966. 36 pp. $1. No. 071–02814.

The final report with criteria, from the Joint Committee on Programed Instruction and Teaching Machines representing the American Educational Research Association, the American Psychological Association and the Department of Audiovisual Instruction.

Spear, James. *ed.* Creating visuals for TV: a guide for educators. 1962. 48 pp. $1.25. No. 071-02630

Practical suggestions for improving TV programs through the more effective use of visual material.